

Copper-Catalyzed Enantioselective Intramolecular *N*-Arylation, an Efficient Method for Kinetic Resolutions

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Supporting Information

Table of Contents

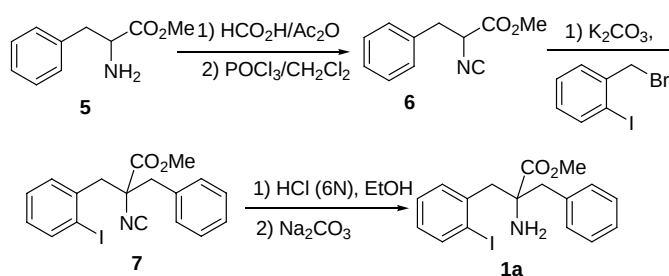
I. General Remarks.....	S2
II. Synthesis of Substrates.....	S2
III. General Procedure for the Kinetic Resolution of Racemic Substrates.....	S9
IV. Determination of Absolute Configuration.....	S18
V. References.....	S18
VI. ¹ H NMR and ¹³ C NMR Spectra.....	S18
VII. HPLC Spectra	S59

1. General Remarks

^1H NMR and ^{13}C NMR spectra were recorded on a Bruker AV-400 or 500 MHz spectrometer. Chemical shifts (δ) are given in relative to tetramethylsilane (δ 0.00 ppm) in CDCl_3 . Coupling constants, J , were reported in hertz unit (Hz). High resolution mass spectra (HRMS) were obtained on a Q-STAR Elite ESI-LC-MS/MS Spectrometer. Chemical names were generated using Cambridge Soft. ChemDraw Ultra 10.0. Optical rotations were measured on a Perkin Elmer 341 polarimeter. Enantiomeric ratios were determined by chiral HPLC using a chiralpak AD-H (Amylose tris (3,5-dimethylphenylcarbamate)coated on $5\mu\text{m}$ silica-gel) or OD-H column (Cellulose tris (3,5-dimethylphenylcarbamate) coated on $5\mu\text{m}$ silica-gel) with hexane and *i*-PrOH as solvents. Commercially obtained reagents were used without further purification.

2. Synthesis of Substrates:

Methyl 2-(2-iodobenzyl)-2-amino-3-phenylpropanoate (**1a**):



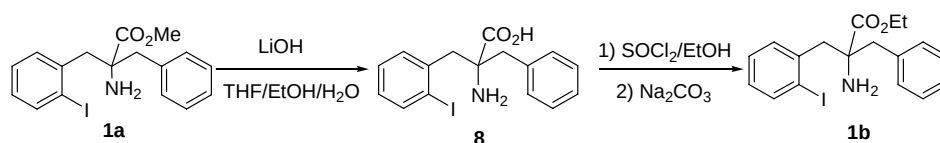
Compound **1a** was prepared according to similar route of literature reported methods¹: To a solution of methyl 2-amino-3-phenylpropanoate (16.5 g, 100 mmol) in formic acid (40 mL, 1 mol) at 0 °C was added dropwise acetic anhydride (10 mL, 100 mmol), the reaction mixture was stirred at room temperature for 2 hours. Then H_2O (100 mL) and ethyl acetate (100 mL) were added into the mixture. The organic phase was separated and the aqueous phase was extracted with ethyl acetate (50.0 mL $\times$ 3). The combined organic phase was washed with H_2O and brine, dried over Na_2SO_4 . The solvent was removed under vacuum and the residue was dissolved in dichloromethane (80 mL) and triethylamine (65 mL, 5.0 equiv) was added. The mixture was cooled with ice bath at -78 °C and POCl_3 (14 mL, 1.5 equiv) was dropwise added below -78 °C. Then the mixture stirred at 0 °C for 3 hours until the reaction was completed. The reaction mixture was quenched with NaHCO_3 aqueous solution and the pH was adjusted to 9-10 and then extracted with dichloromethane (500 mL $\times$ 3). Combined organic phase was washed with water and brine, dried over Na_2SO_4 . The solvent was removed under reduced pressure to afford the crude product **6** for next step without further purification.

To a solution of **6** (13.2g, 70 mmol) in acetonitrile (200 mL) were added K_2CO_3 (48.3 g, 350.0 mmol), TBAHS (14.0 mmol), and 1-(Bromomethyl)-2-iodobenzene (22.7 g, 77 mmol). The mixture was heated at 85 °C until the reaction was completed, monitoring with TLC. Then the mixture was cooled and the solvent was removed under reduced pressure. H_2O (200 mL) and ethyl

acetate (200 mL) were added into the mixture. The organic phase was separated and the aqueous phase was extracted with ethyl acetate (200.0 mL $\times$ 3). The combined organic phase was washed with H₂O and brine, dried over Na₂SO₄. The solvent was removed under vacuum to afford the crude product **7** for next step.

The crude product **7** was dissolved in EtOH (100 mL). Hydrochloric acid (6N, 50 mL) was then added and the mixture was stirred overnight at room temperature. After the reaction was completed, ethanol was removed under reduced pressure. The aqueous phase was brought to pH 9-10 by adding Na₂CO₃ solution and then extracted with ethyl acetate (100 mL $\times$ 3). Combined organic phase was washed with water and brine, dried over Na₂SO₄. The solvent was removed under reduced pressure and the residue was loaded on silica gel column and purified by flash chromatography (ethyl acetate/petroleum ether = 1/4 to 1/1) to afford the pure product **1a** (21.4 g, 80%). ¹H NMR (400 MHz, CDCl₃) δ 7.85 (d, *J* = 8.0 Hz, 1H), 7.22-7.29 (m, 7H), 6.91-6.95 (m, 1H), 3.70 (s, 3H), 3.50 (d, *J* = 14.0 Hz, 1H), 3.37-3.43 (m, 2H), 3.01 (d, *J* = 13.2 Hz, 1H); ¹³C NMR (125 MHz, CDCl₃) δ 175.8, 140.0, 139.5, 135.8, 130.5, 130.2, 128.7, 128.4, 128.2, 127.1, 102.9, 63.7, 52.1, 48.9, 46.0; ESI-MS *m/z* 396.0 (M + H)⁺; HRMS calcd for C₁₇H₁₉INO₂⁺ (M + H)⁺ 396.0455, found 396.0453.

Ethyl 2-(2-iodobenzyl)-2-amino-3-phenylpropanoate (**1b**):



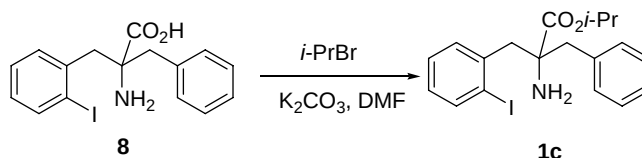
This compound was prepared from **1a**: LiOH (1.44 g, 60 mmol) was added into the solution of compound **1a** (7.9 g, 20 mmol) in the mixed solvents of THF/EtOH/H₂O (1/1/1, 30 mL). The mixture was heated at 60 °C for 5 hours until the reaction was completed. The organic solvents were removed under reduced pressure. The aqueous phase was adjusted to pH 5-6 with 1N HCl and then extracted with ethyl acetate (10 mL $\times$ 3). The combined organic phase was washed with H₂O, brine and dried over Na₂SO₄. The solvent was removed under reduced pressure to afford a crude product of **8** (7.2 g, 96%) for next step without further purification.

To a solution of compound **8** (1.9 g, 5 mmol) in EtOH (20 mL), was added SOCl₂ and the mixture was stirred at 50 °C for 4 hours. The solvents were evaporated under vacuum. The residue was dissolved in ethyl acetate and Na₂CO₃ aqueous solution was added for neutralization. The organic phase was separated and the aqueous phase was extracted with ethyl acetate (10 mL $\times$ 2). The combined organic phase was washed with brine and dried over Na₂SO₄. The solvents were removed under reduced pressure. The residue was loaded on silica gel column and purified by flash chromatography (ethyl acetate/petroleum ether = 1/4 to 1/1) to afford the pure product **1b** (2.0 g, 98%).

¹H NMR (500 MHz, CDCl₃) δ 7.88 (d, *J* = 8.0 Hz, 1H), 7.25-7.33 (m, 7H), 6.93-6.97 (m, 1H), 4.18 (q, *J* = 7.5 Hz, 1H), 3.48 (d, *J* = 14.0 Hz, 1H), 3.42 (d, *J* = 13.0 Hz, 1H), 3.33 (d, *J* = 14.0, 1H),

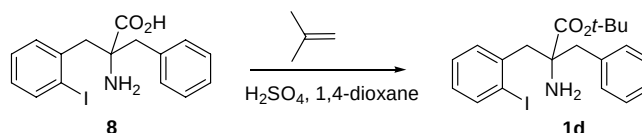
2.95 (d, $J = 13.0$ Hz, 1H), 1.26 (t, $J = 7.5$ Hz, 3H); ^{13}C NMR (125 MHz, CDCl_3) δ 175.5, 139.9, 139.8, 136.0, 130.5, 130.3, 128.6, 128.3, 128.1, 127.0, 103.1, 63.5, 61.3, 49.0, 46.1, 14.1; ESI-MS m/z 410.0 ($\text{M} + \text{H}$) $^+$; HRMS calcd for $\text{C}_{18}\text{H}_{21}\text{INO}_2^+$ ($\text{M} + \text{H}$) $^+$ 410.0611, found 410.0609.

Isopropyl 2-(2-iodobenzyl)-2-amino-3-phenylpropanoate (1c):



To a solution of compound **8** (1.9 g, 5 mmol) in DMF (5.0 mL) was added K_2CO_3 (1.38 g, 10 mmol), *i*-PrBr (610 mg, 5 mmol). The mixture were stirred for 3 hours at room temperature. H_2O (10 mL) and ethyl acetate (10 mL) were added into the reaction mixture. The organic phase was separated and the aqueous phase was extracted with ethyl acetate (10 mL $\times$ 2). The combined organic phase was washed with brine and dried over Na_2SO_4 . The solvents were removed under reduced pressure. The residue was loaded on silica gel column and purified by flash chromatography (ethyl acetate/petroleum ether = 1/4 to 1/1) to afford the pure product **1c** (1.6 g, 76%). ^1H NMR (500 MHz, CDCl_3) δ 7.85 (d, $J = 8.0$ Hz, 1H), 7.23-7.32 (m, 7H), 6.90-6.92 (m, 1H), 4.98 (h, $J = 6.0$ Hz, 1H), 3.43 (d, $J = 14.0$ Hz, 1H), 3.36 (d, $J = 13.0$ Hz, 1H), 3.28 (d, $J = 14.0$, 1H), 2.93 (d, $J = 13.0$ Hz, 1H), 1.20 (d, $J = 6.0$ Hz, 3H), 1.13 (d, $J = 6.0$ Hz, 3H); ^{13}C NMR (125 MHz, CDCl_3) δ 174.5, 139.9, 139.7, 135.8, 130.4, 130.3, 128.5, 128.3, 128.1, 127.0, 103.3, 69.3, 63.5, 48.8, 45.9, 21.7, 21.6; ESI-MS m/z 424.1 ($\text{M} + \text{H}$) $^+$; HRMS calcd for $\text{C}_{19}\text{H}_{23}\text{INO}_2^+$ ($\text{M} + \text{H}$) $^+$ 424.0768, found 424.0765.

***tert*-Butyl 2-(2-iodobenzyl)-2-amino-3-phenylpropanoate (1d):**

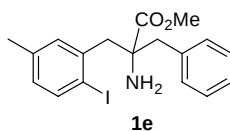


Compound **8** (1.9 g, 5 mmol) was dissolved in 1,4-dioxane (10.0 mL) and H_2SO_4 (1.0 mL). To the mixture was added isobutene (15 mL) at -40 $^\circ\text{C}$. The mixture was stirred at room temperature in a sealed tube for 24 hours. After the reaction was completed, the reaction mixture was poured into ice and the pH was adjusted to 9-10 with 10% NaOH aqueous solution. The aqueous phase was extracted with ethyl acetate (15 mL $\times$ 3). The combined organic phase was washed with H_2O and brine, dried over Na_2SO_4 . The solvents were removed under reduced pressure and the residue was purified by flash chromatography (ethyl acetate/petroleum ether = 1/4 to 1/1) to afford the pure product **1d** (1.4 g, 65%).

^1H NMR (400 MHz, CDCl_3) δ 7.84 (d, $J = 8.0$ Hz, 1H), 7.43 (d, $J = 6.4$ Hz, 1H), 7.24-7.28 (m, 6H), 6.89-6.94 (m, 1H), 3.30-3.44 (m, 3H), 2.92 (d, $J = 13.2$ Hz, 1H), 1.39 (s, 9H); ^{13}C NMR (125 MHz, CDCl_3) δ 173.7, 139.9, 139.6, 135.7, 130.7, 130.6, 128.6, 128.3, 128.2, 127.1, 103.4, 82.4,

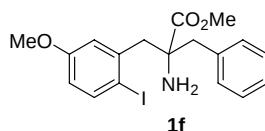
63.8, 48.5, 45.4, 28.0; ESI-MS m/z 438.1 ($M + H$)⁺; HRMS calcd for C₂₀H₂₅INO₂⁺ ($M + H$)⁺ 438.0924, found 438.0930.

Methyl 2-(2-iodo-5-methylbenzyl)-2-amino-3-phenylpropanoate (1e):



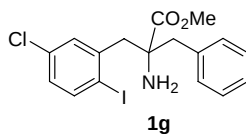
This compound was prepared similarly to **1a**. ¹H NMR (400 MHz, CDCl₃) δ 7.70 (d, J = 8.0 Hz, 1H), 7.22-7.31 (m, 5H), 7.11 (s, 1H), 6.76 (d, J = 8.0 Hz, 1H), 3.70 (s, 3H), 3.32-3.48 (m, 3H), 3.01 (d, J = 13.2 Hz, 1H), 2.27 (s, 3H); ¹³C NMR (125 MHz, CDCl₃) δ 175.0, 139.7, 138.8, 138.2, 135.5, 131.6, 130.3, 129.8, 128.5, 127.2, 98.7, 63.9, 52.3, 48.3, 45.3, 21.0; ESI-MS m/z 410.0 ($M + H$)⁺; HRMS calcd for C₁₈H₂₁INO₂⁺ ($M + H$)⁺ 410.0611, found 410.0612.

Methyl 2-(2-iodo-5-methoxybenzyl)-2-amino-3-phenylpropanoate (1f):



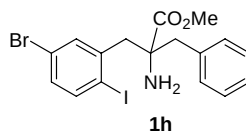
This compound was prepared similarly to **1a**. ¹H NMR (400 MHz, CDCl₃) δ 7.70 (d, J = 8.8 Hz, 1H), 7.19-7.31 (m, 5H), 6.87 (d, J = 2.8 Hz, 1H), 6.52 (dd, J = 8.8 Hz, 2.8 Hz, 1H), 3.73 (s, 3H), 3.71 (s, 3H), 3.41 (d, J = 13.6 Hz, 1H), 3.38 (d, J = 13.2 Hz, 1H), 3.23 (d, J = 13.6 Hz, 1H), 2.90 (d, J = 13.2 Hz, 1H); ¹³C NMR (100 MHz, CDCl₃) δ 175.8, 159.9, 140.7, 140.3, 136.0, 130.3, 128.4, 127.1, 116.6, 115.0, 91.4, 63.8, 55.3, 52.1, 49.0, 46.3; ESI-MS m/z 426.0 ($M + H$)⁺; HRMS calcd for C₁₈H₂₁INO₃⁺ ($M + H$)⁺ 426.0561, found 426.0561.

Methyl 2-(5-chloro-2-iodobenzyl)-2-amino-3-phenylpropanoate (1g):



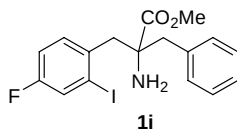
This compound was prepared similarly to **1a**. ¹H NMR (400 MHz, CDCl₃) δ 7.75 (d, J = 8.4 Hz, 1H), 7.19-7.30 (m, 6H), 6.92 (d, J = 2.4 Hz, 1H), 3.72 (s, 3H), 3.29-3.45 (m, 3H), 2.94 (d, J = 13.2 Hz, 1H); ¹³C NMR (125 MHz, CDCl₃) δ 175.5, 141.6, 141.0, 135.7, 134.6, 130.8, 130.4, 129.1, 128.7, 127.4, 100.1, 64.0, 52.6, 48.8, 46.0; ESI-MS m/z 430.0 ($M + H$)⁺; HRMS calcd for C₁₇H₁₈ClINO₂⁺ ($M + H$)⁺ 430.0065, found 430.0068.

Methyl 2-(5-bromo-2-iodobenzyl)-2-amino-3-phenylpropanoate (1h):



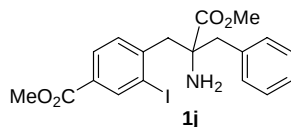
This compound was prepared similarly to **1a**. ^1H NMR (400 MHz, CDCl_3) δ 7.68 (d, J = 8.4 Hz, 1H), 7.42 (d, J = 2.0 Hz, 1H), 7.25-7.31 (m, 3H), 7.19 (d, J = 8.4 Hz, 2H), 7.05 (d, J = 2.0 Hz, 1H), 3.72 (s, 3H), 3.41 (d, J = 14.0 Hz, 1H), 3.36 (d, J = 12.8 Hz, 1H), 3.24 (d, J = 14.0 Hz, 1H), 2.92 (d, J = 12.8 Hz, 1H), 2.05 (brs, 2H); ^{13}C NMR (125 MHz, CDCl_3) δ 175.4, 141.8, 140.9, 135.5, 133.3, 131.6, 130.1, 128.4, 127.1, 122.3, 100.7, 63.6, 52.2, 48.6, 45.8; ESI-MS m/z 474.0, 476.0 ($\text{M} + \text{H}$) $^+$; HRMS calcd for $\text{C}_{17}\text{H}_{18}\text{BrINO}_2^+$ ($\text{M} + \text{H}$) $^+$ 473.9560, found 475.9540, 473.9563 (1/1).

Methyl 2-(4-fluoro-2-iodobenzyl)-2-amino-3-phenylpropanoate (1i):



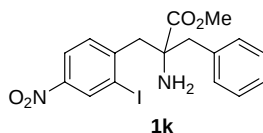
This compound was prepared similarly to **1a**. ^1H NMR (400 MHz, CDCl_3) δ 7.56 (m, 1H), 7.19-7.29 (m, 6H), 7.00-7.04 (m, 1H), 3.70 (s, 3H), 3.30-3.48 (m, 3H), 2.94 (d, J = 13.2 Hz, 1H); ^{13}C NMR (125 MHz, CDCl_3) δ 175.4, 160.8, 135.5, 131.0, 130.2, 128.5, 127.2, 126.6, 115.4, 101.8, 63.7, 52.3, 47.6, 45.6; ESI-MS m/z 414.0 ($\text{M} + \text{H}$) $^+$; HRMS calcd for $\text{C}_{17}\text{H}_{18}\text{FINO}_2^+$ ($\text{M} + \text{H}$) $^+$ 414.0361, found 414.0356.

Methyl 4-(2-amino-2-benzyl-3-methoxy-3-oxopropyl)-3-iodobenzoate (1j):



This compound was prepared similarly to **1a**. ^1H NMR (400 MHz, CDCl_3) δ 8.51 (d, J = 1.6 Hz, 1H), 7.93 (dd, J = 8.0 Hz, 1.6 Hz, 1H), 7.38 (d, J = 8.0 Hz, 1H), 7.26 (m, 3H), 7.19 (d, J = 8.0 Hz, 2H), 3.90 (s, 3H), 3.69 (s, 3H), 3.52 (d, J = 14.0 Hz, 1H), 3.38-3.42 (m, 2H), 2.98 (d, J = 13.2 Hz, 1H); ^{13}C NMR (125 MHz, CDCl_3) δ 175.4, 165.3, 144.8, 140.8, 135.5, 130.2, 130.1, 129.0, 128.4, 127.2, 102.3, 63.6, 52.3, 52.2, 48.8, 46.0; ESI-MS m/z 454.0 ($\text{M} + \text{H}$) $^+$; HRMS calcd for $\text{C}_{19}\text{H}_{21}\text{INO}_4^+$ ($\text{M} + \text{H}$) $^+$ 454.0510, found 454.0509.

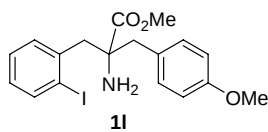
Methyl 2-(2-iodo-4-nitrobenzyl)-2-amino-3-phenylpropanoate (1k):



This compound was prepared similarly to **1a**. ^1H NMR (400 MHz, CDCl_3) δ 8.68 (d, J = 2.4 Hz, 1H), 8.12 (dd, J = 8.4 Hz, 2.4 Hz, 1H), 7.50 (d, J = 8.4 Hz, 1H), 7.26-7.30 (m, 3H), 7.15-7.19 (m, 2H), 3.72 (s, 3H), 3.50 (d, J = 14.0 Hz, 1H), 3.37 (d, J = 13.2 Hz, 1H), 3.33 (d, J = 14.0 Hz, 1H), 2.87 (d, J = 13.2 Hz, 1H); ^{13}C NMR (125 MHz, CDCl_3) δ 175.4, 147.6, 146.7, 135.3, 134.5, 130.5, 130.1, 128.5, 127.3, 122.7, 101.9, 63.6, 52.4, 48.6, 46.3; ESI-MS m/z 441.0 ($\text{M} + \text{H}$) $^+$; HRMS

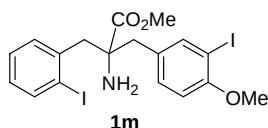
calcd for $C_{17}H_{18}IN_2O_4^+$ ($M + H$) $^+$ 441.0306, found 441.0302.

Methyl 2-(2-iodobenzyl)-2-amino-3-(4-methoxyphenyl)propanoate (1l):



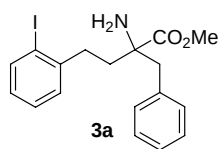
This compound was prepared similarly to **1a**. 1H NMR (400 MHz, $CDCl_3$) δ 7.86 (d, J = 8.0 Hz, 1H), 7.24-7.30 (m, 2H), 7.11(d, J = 8.4 Hz, 2H), 6.90-6.95 (m, 1H), 6.83 (d, J = 8.4 Hz, 2H), 3.79 (s, 3H), 3.71 (s, 3H), 3.43 (d, J = 14.0 Hz, 1H), 3.34 (d, J = 13.2 Hz, 1H), 3.26 (d, J = 14.0 Hz, 1H), 2.84 (d, J = 13.2 Hz, 1H); ^{13}C NMR (125 MHz, $CDCl_3$) δ 176.1, 158.6, 140.0, 139.7, 131.1, 130.4, 128.6, 128.1, 127.9, 113.8, 102.9, 63.7, 55.1, 52.0, 48.9, 45.2; ESI-MS m/z 426.0 ($M + H$) $^+$; HRMS calcd for $C_{18}H_{21}INO_3^+$ ($M + H$) $^+$ 426.0561, found 426.0557.

Methyl 2-(2-iodobenzyl)-2-amino-3-(3-iodo-4-methoxyphenyl)propanoate (1m):



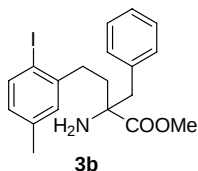
This compound was prepared similarly to **1a**. 1H NMR (400 MHz, $CDCl_3$) δ 7.78 (d, J = 8.0 Hz, 1H), 7.55 (d, J = 1.6 Hz, 1H), 7.17-7.23 (m, 2H), 7.11(dd, J = 8.0 Hz, 1.6 Hz, 1H), 6.83-6.88 (m, 1H), 6.66 (d, J = 8.0 Hz, 1H), 3.78 (s, 3H), 3.65 (s, 3H), 3.37 (d, J = 14.0 Hz, 1H), 3.21-3.26 (m, 2H), 2.77 (d, J = 13.2 Hz, 1H), 2.21 (brs, 2H); ^{13}C NMR (125 MHz, $CDCl_3$) δ 175.4, 157.3, 140.9, 140.0, 139.3, 131.2, 130.6, 129.9, 128.8, 128.2, 110.7, 102.9, 85.9, 63.8, 56.3, 52.3, 48.6, 44.3; ESI-MS m/z 551.7 ($M + H$) $^+$; HRMS calcd for $C_{18}H_{20}I_2NO_3^+$ ($M + H$) $^+$ 551.9533, 552.9566, found 551.9537.

Methyl 2-amino-2-benzyl-4-(2-iodophenyl)butanoate (3a):



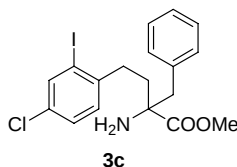
This compound was prepared similarly to **1a**. 1H NMR (400 MHz, $CDCl_3$) δ 7.82 (dd, J = 8.0 Hz, 0.8 Hz, 1H), 7.21-7.34 (m, 7H), 6.90-6.94 (m, 1H), 3.72 (s, 3H), 3.28 (d, J = 13.6 Hz, 1H), 3.09 (d, J = 13.6 Hz, 1H), 2.99-3.05 (m, 1H), 2.69-2.77 (m, 1H), 2.34-2.41 (m, 1H), 2.04-2.08 (m, 1H); ^{13}C NMR (125 MHz, $CDCl_3$) δ 176.5, 144.0, 139.5, 136.1, 129.9, 129.5, 128.5, 128.4, 127.9, 127.0, 100.2, 62.0, 52.1, 45.9, 41.0, 35.6; ESI-MS m/z 410.2 ($M + H$) $^+$; HRMS calcd for $C_{18}H_{21}INO_2^+$ ($M + H$) $^+$ 410.0611, found 410.0616.

Methyl 2-amino-2-benzyl-4-(2-iodo-5-methylphenyl)butanoate (3b):



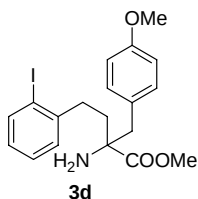
This compound was prepared similarly to **1a**. ^1H NMR (400 MHz, CDCl_3) δ 7.65 (d, J = 8.0 Hz, 1H), 7.21-7.31 (m, 3H), 7.17 (dd, J = 8.0 Hz, 1.2 Hz, 2H), 7.05 (d, J = 2.0 Hz, 1H), 6.71 (dd, J = 8 Hz, 2Hz, 1H), 3.75 (s, 3H), 3.26 (d, J = 13.6 Hz, 1H), 2.87 (d, J = 13.6 Hz, 1H), 2.80-2.84 (m, 1H), 2.56-2.63 (m, 1H), 2.26 (s, 3H), 2.22-2.20 (m, 1H), 1.91 (br s, 2H), 1.92-1.85 (m, 1H); ^{13}C NMR (125 MHz, CDCl_3) δ 176.2, 143.6, 139.2, 138.5, 135.9, 130.5, 129.9, 129.0, 128.9, 128.5, 127.1, 96.1, 62.2, 52.2, 45.8, 40.9, 35.4, 20.8; ESI-MS m/z 426.1 ($\text{M} + \text{H}$) $^+$; HRMS calcd for $\text{C}_{19}\text{H}_{23}\text{INO}_2^+$ ($\text{M} + \text{H}$) $^+$ 424.0768, found 424.0776.

Methyl 2-amino-2-benzyl-4-(4-chloro-2-iodophenyl)butanoate (3c):

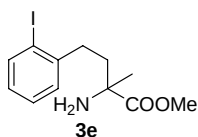


This compound was prepared similarly to **1a**. ^1H NMR (400 MHz, CDCl_3) δ 7.78 (d, J = 2.0 Hz, 1H), 7.24-7.29 (m, 4H), 7.14-7.16 (m, 3H), 3.75 (s, 3H), 3.26 (d, J = 13.6 Hz, 1H), 2.87 (d, J = 13.6 Hz, 1H), 2.82-2.86 (m, 1H), 2.57-2.65 (m, 1H), 2.11-2.18 (m, 1H), 2.05 (br s, 2H), 1.82-1.89 (m, 1H); ^{13}C NMR (125 MHz, CDCl_3) δ 175.7, 142.5, 138.6, 135.6, 132.4, 130.0, 129.9, 128.7, 128.6, 127.2, 99.9, 62.3, 52.3, 45.6, 40.3, 34.9; ESI-MS m/z 444.0 ($\text{M} + \text{H}$) $^+$; HRMS calcd for $\text{C}_{18}\text{H}_{20}\text{ClINO}_2^+$ ($\text{M} + \text{H}$) $^+$ 444.0222, found 444.0234.

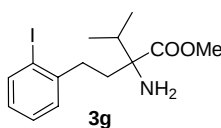
Methyl 2-(4-methoxybenzyl)-2-amino-4-(2-iodophenyl)butanoate (3d):



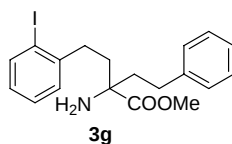
This compound was prepared similarly to **1a**. ^1H NMR (400 MHz, CDCl_3) δ 7.80 (d, J = 7.6 Hz, 1H), 7.21-7.294 (m, 2H), 7.08 (d, J = 8.4 Hz, 2H), 6.86-6.90 (m, 1H), 6.83 (d, J = 8.4 Hz, 2H), 3.78 (s, 3H), 3.75 (s, 3H), 3.19 (d, J = 13.2 Hz, 1H), 2.83-2.90 (m, 1H), 2.78 (d, J = 13.2 Hz, 1H), 2.58-2.65 (m, 1H), 2.12-2.20 (m, 1H), 1.86-1.89 (m, 1H); ^{13}C NMR (125 MHz, CDCl_3) δ 176.6, 158.7, 144.1, 139.5, 130.9, 129.5, 128.5, 128.0, 127.9, 113.9, 100.2, 62.1, 55.2, 52.1, 45.1, 40.9, 35.7; ESI-MS m/z 439.6 ($\text{M} + \text{H}$) $^+$; HRMS calcd for $\text{C}_{19}\text{H}_{23}\text{INO}_3^+$ ($\text{M} + \text{H}$) $^+$ 440.0717, found 440.0719.

Methyl 2-amino-4-(2-iodophenyl)-2-methylbutanoate (3e):

This compound was prepared similarly to **1a**. ^1H NMR (400 MHz, CDCl_3) δ 7.78 (d, $J = 8.0$ Hz, 1H), 7.21-7.27 (m, 2H), 6.85-6.89 (m, 1H), 3.75 (s, 3H), 2.75-2.82 (m, 1H), 2.62-2.70 (m, 1H), 2.13 (br s, 2H), 1.94-2.02 (m, 1H), 1.80-1.88 (m, 1H), 1.43 (s, 3H); ^{13}C NMR (125 MHz, CDCl_3) δ 177.6, 144.1, 139.5, 129.4, 128.5, 127.8, 100.2, 57.7, 52.3, 41.5, 35.7, 26.2; ESI-MS m/z 334.0 ($\text{M} + \text{H}$) $^+$; HRMS calcd for $\text{C}_{12}\text{H}_{17}\text{INO}_2^+$ ($\text{M} + \text{H}$) $^+$ 334.0298, found 334.0303.

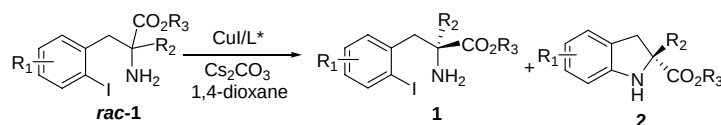
Methyl 2-(2-iodophenethyl)-2-amino-3-methylbutanoate (3f):

This compound was prepared similarly to **1a**. ^1H NMR (500 MHz, CDCl_3) δ 7.78 (d, $J = 7.5$ Hz, 1H), 7.21-7.25 (m, 2H), 6.85-6.89 (m, 1H), 3.78 (s, 3H), 2.83-2.86 (m, 1H), 2.49-2.51 (m, 1H), 1.98-2.08 (m, 2H), 1.80 (m, 1H), 0.89-0.96 (m, 6H); ^{13}C NMR (125 MHz, CDCl_3) δ 176.4, 144.2, 139.4, 129.7, 128.4, 127.8, 100.1, 62.0, 52.2, 35.7, 35.3, 29.6, 17.8, 16.1; ESI-MS m/z 362.1 ($\text{M} + \text{H}$) $^+$; HRMS calcd for $\text{C}_{14}\text{H}_{21}\text{INO}_2^+$ ($\text{M} + \text{H}$) $^+$ 362.0611, found 362.0627.

Methyl 2-amino-2-(2-iodophenethyl)-4-phenylbutanoate (3g):

This compound was prepared similarly to **1a**. ^1H NMR (400 MHz, CDCl_3) δ 7.77 (d, $J = 8.0$ Hz, 1H), 7.18-7.26 (m, 7H), 6.84-6.88 (m, 1H), 3.72 (s, 3H), 2.85-2.90 (m, 2H), 2.62-2.78 (m, 1H), 2.53-2.59 (m, 1H), 1.92-2.19 (m, 4H), 1.76 (brs, 2H); ^{13}C NMR (125 MHz, CDCl_3) δ 176.7, 144.0, 141.4, 139.5, 129.5, 128.5, 128.4, 128.3, 128.0, 126.0, 100.2, 61.1, 52.3, 41.5, 40.6, 35.5, 30.5; ESI-MS m/z 424.1 ($\text{M} + \text{H}$) $^+$; HRMS calcd. for $\text{C}_{19}\text{H}_{23}\text{INO}_2^+$ ($\text{M} + \text{H}$) $^+$ 424.0768, found 424.0773.

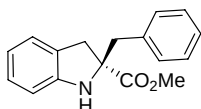
3. General Procedure for the Kinetic Resolution of Racemic Substrates via Copper-Catalyzed Intramolecular *N*-Arylation:



The reaction mixture of *rac-1* (0.2 mmol), ligand (0.012 mmol), CuI (0.01 mmol) and Cs_2CO_3 (0.2 mmol) in 1,4-dioxane (1.5 mL) were stirred at room temperature and monitored by HPLC. When about 50% starting material was transformed into coupling

product, H₂O (5.0 mL) and ethyl acetate (5.0 mL) were added into the mixture. The organic phase was separated and the aqueous phase was extracted with ethyl acetate (5.0 mL × 3). The combined organic phase was washed with H₂O and brine, dried over Na₂SO₄. The solvent was removed under reduced pressure. The residue was loaded on silica column and purified by flash chromatography (ethyl acetate/petroleum ether = 1/5 to 1/10) to afford the coupling products **2** and recovered the unreacted starting materials **1**. The enantiomeric excess was determined by chiral HPLC analysis.

(R)-Methyl 2-benzy lindoline-2-carboxylate (2a):

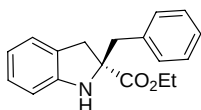


¹H NMR (400 MHz, CDCl₃) δ 7.24-7.32 (m, 3H), 7.16-7.18 (m, 2H), 7.02-7.07 (m, 2H), 6.71-6.75 (m, 1H), 6.65-6.68 (m, 1H), 3.65 (s, 3H), 3.53 (d, *J* = 16.4 Hz, 1H), 3.32 (d, *J* = 13.2 Hz, 1H), 3.15 (d, *J* = 16.4 Hz, 1H), 3.08 (d, *J* = 13.2 Hz, 1H); ¹³C NMR (125 MHz, CDCl₃) δ 175.6, 149.5, 136.2, 129.6, 128.4, 127.7, 127.1, 126.4, 124.5, 119.2, 109.7, 71.9, 52.3, 45.2, 40.2; ESI-MS *m/z* 268.1 (M + H)⁺; HRMS calcd for C₁₇H₁₈NO₂⁺ (M + H)⁺ 268.1332, found 268.1329; HPLC Chiralpak AD-H (hexane/*i*-PrOH = 95:5, 1.0 mL/min) τ_{minor} = 7.4 min, τ_{major} = 10.3 min. [α]_D²⁰ -20.4 (c 0.5, MeOH, 89% *ee*).

Recovered (S)-1a:

HPLC Chiralpak OD-H (hexane/*i*-PrOH = 95:5, 1.0 mL/min) τ_{minor} = 12.0 min, τ_{major} = 10.2 min. [α]_D²⁰ -12.4 (c 1.0, CHCl₃, 94% *ee*).

(R)-Methyl 2-benzy lindoline-2-carboxylate (2b):



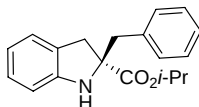
¹H NMR (400 MHz, CDCl₃) δ 7.20-7.32 (m, 5H), 7.03-7.07 (m, 2H), 6.66-6.74 (m, 2H), 4.06-4.15 (m, 2H), 3.54 (d, *J* = 16.0 Hz, 1H), 3.31 (d, *J* = 13.6 Hz, 1H), 3.55 (d, *J* = 16.0 Hz, 1H), 3.08 (d, *J* = 13.6 Hz, 1H), 1.19 (t, *J* = 7.2 Hz, 3H); ¹³C NMR (125 MHz, CDCl₃) δ 175.2, 149.6, 136.3, 129.8, 128.3, 127.7, 127.0, 126.5, 124.5, 119.1, 109.7, 71.7, 61.4, 45.3, 40.3, 14.1; ESI-MS *m/z* 282.1 (M + H)⁺; HRMS calcd for C₁₈H₂₀NO₂⁺ (M + H)⁺ 282.1489, found 282.1490; HPLC Chiralpak AD-H (hexane/*i*-PrOH = 97:3, 1.0 mL/min) τ_{minor} = 8.9 min, τ_{major} = 14.3 min. [α]_D²⁰ -21.7 (c 0.5, MeOH, 93% *ee*).

Recovered (S)-1b:

HPLC Chiralpak OD-H (hexane/*i*-PrOH = 95:5, 1.0 mL/min) τ_{minor} = 9.9 min, τ_{major} = 8.5 min.

$[\alpha]_D^{20}$ -8.5 (c 0.5, CHCl₃, 85% *ee*).

(R)-Isopropyl 2-benzylindoline-2-carboxylate (2c):

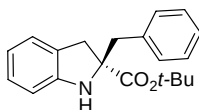


¹H NMR (400 MHz, CDCl₃) δ 7.12-7.22 (m, 5H), 6.93-6.98 (m, 2H), 6.57-6.65 (m, 2H), 4.85 (h, *J* = 6.0 Hz, 1H), 3.43 (d, *J* = 16.0 Hz, 1H), 3.20 (d, *J* = 13.2 Hz, 1H), 3.05 (d, *J* = 16.0 Hz, 1H), 3.00 (d, *J* = 13.2 Hz, 1H), 1.12 (d, *J* = 6.0 Hz, 3H), 1.04 (d, *J* = 6.0 Hz, 3H); ¹³C NMR (125 MHz, CDCl₃) δ 174.5, 149.5, 136.3, 129.8, 128.2, 127.6, 126.9, 126.5, 124.4, 119.0, 109.6, 71.5, 69.0, 45.0, 40.4, 21.7, 21.6; ESI-MS *m/z* 296.1 (M + H)⁺; HRMS calcd for C₁₉H₂₂NO₂⁺ (M + H)⁺ 296.1645, found 296.1646; HPLC Chiralpak AD-H (hexane/*i*-PrOH = 95:5, 1.0 mL/min) τ_{minor} = 6.3 min, τ_{major} = 10.7 min. $[\alpha]_D^{20}$ -21.2 (c 0.5, MeOH, 90% *ee*).

Recovered (S)-1c:

HPLC Chiralpak OD-H (hexane/*i*-PrOH = 95:5, 1.0 mL/min) τ_{minor} = 7.6 min, τ_{major} = 6.3 min. $[\alpha]_D^{20}$ -12.8 (c 0.5, CHCl₃, 87% *ee*).

(R)-tert-Butyl 2-benzylindoline-2-carboxylate (2d):

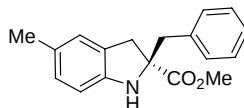


¹H NMR (400 MHz, CDCl₃) δ 7.24-7.29 (m, 5H), 7.02-7.06 (m, 2H), 6.66-6.74 (m, 2H), 3.48 (d, *J* = 16.0 Hz, 1H), 3.27 (d, *J* = 13.2 Hz, 1H), 3.11 (d, *J* = 16.0 Hz, 1H), 3.07 (d, *J* = 13.2 Hz, 1H), 1.38 (s, 9H); ¹³C NMR (125 MHz, CDCl₃) δ 174.2, 149.7, 136.5, 130.1, 128.2, 127.6, 126.9, 124.4, 119.0, 109.6, 81.9, 71.7, 45.0, 40.7, 27.9; ESI-MS *m/z* 310.2 (M + H)⁺; HRMS calcd for C₂₀H₂₄NO₂⁺ (M + H)⁺ 310.1802, found 310.1807; HPLC Chiralpak AD-H (hexane/*i*-PrOH = 95:5, 1.0 mL/min) τ_{minor} = 5.0 min, τ_{major} = 8.5 min. $[\alpha]_D^{20}$ -22.2 (c 0.5, MeOH, 91% *ee*).

Recovered (S)-1d:

HPLC Chiralpak OD-H (hexane/*i*-PrOH = 95:5, 1.0 mL/min) τ_{minor} = 6.7 min, τ_{major} = 5.5 min. $[\alpha]_D^{20}$ -11.6 (c 0.5, CHCl₃, 90% *ee*).

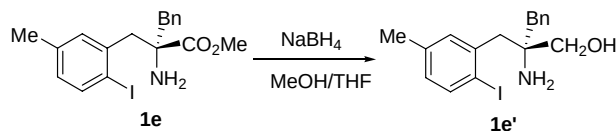
(R)-Methyl 2-benzyl-5-methylindoline-2-carboxylate (2e):



¹H NMR (400 MHz, CDCl₃) δ 7.25-7.30 (m, 3H), 7.16-7.18 (m, 2H), 6.90 (s, 1H), 6.86 (d, *J* = 8.0 Hz, 1H), 6.59 (d, *J* = 8.0 Hz, 1H), 3.65 (s, 3H), 3.50 (d, *J* = 16.0 Hz, 1H), 3.30 (d, *J* = 13.2 Hz, 1H), 3.13 (d, *J* = 16.0 Hz, 1H), 3.08 (d, *J* = 13.2 Hz, 1H), 2.25 (s, 3H); ¹³C NMR (125 MHz, CDCl₃) δ 175.7, 147.2, 136.3, 129.6, 128.6, 128.4, 128.0, 127.0, 126.7, 125.2, 109.6, 72.1, 52.2,

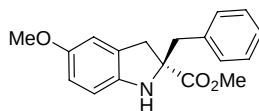
45.2, 40.3, 20.8; ESI-MS m/z 282.1 ($M + H$)⁺; HRMS calcd for C₁₈H₂₀NO₂⁺ ($M + H$)⁺ 282.1489, found 282.1490; HPLC Chiralpak AD-H (hexane/*i*-PrOH = 90 : 10, 1.0 mL/min) τ_{minor} = 5.9 min, τ_{major} = 7.7 min. $[\alpha]_{\text{D}}^{20}$ -24.4 (*c* 0.5, MeOH, 87% *ee*).

Recovered (S)-1e: Compound **1e** was transformed into **1e'** for the determent of enantiomeric excess by chiral HPLC.



(S)-1e' ¹H NMR (400 MHz, CDCl₃) δ 7.69 (d, *J* = 8.0 Hz, 1H), 7.22-7.34 (m, 5H), 7.10 (s, 1H), 6.75 (d, *J* = 8.0 Hz, 1H), 3.45 (d, *J* = 11.2 Hz, 1H), 3.35 (d, *J* = 11.2 Hz, 1H), 3.05 (d, *J* = 14.0 Hz, 1H), 2.98 (d, *J* = 14.0 Hz, 1H), 2.93 (s, 2H), 2.28 (s, 3H); ESI-MS m/z 382.1 ($M + H$)⁺; HRMS calcd for C₁₇H₂₁INO₂⁺ ($M + H$)⁺ 382.0662, found 382.0656; HPLC Chiralpak OD-H (hexane/*i*-PrOH = 92 : 8, 1.0 mL/min) τ_{minor} = 10.3 min, τ_{major} = 7.9 min. $[\alpha]_{\text{D}}^{20}$ 10.4 (*c* 0.5, CHCl₃, 86% *ee*).

(R)-Methyl 2-benzyl-5-methoxyindoline-2-carboxylate (2f):

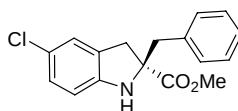


¹H NMR (400 MHz, CDCl₃) δ 7.10-7.24 (m, 5H), 6.62 (s, 1H), 6.54-6.58 (m, 2H), 3.66 (s, 3H), 3.58 (s, 3H), 3.44 (d, *J* = 16.0 Hz, 1H), 3.23 (d, *J* = 13.2 Hz, 1H), 3.08 (d, *J* = 16.0 Hz, 1H), 3.06 (d, *J* = 13.2 Hz, 1H); ¹³C NMR (125 MHz, CDCl₃) δ 175.6, 153.9, 143.0, 136.2, 129.6, 128.4, 128.2, 127.1, 112.7, 111.3, 110.5, 72.6, 55.9, 52.3, 45.0, 40.5; ESI-MS m/z 298.1 ($M + H$)⁺; HRMS calcd for C₁₈H₂₀NO₃⁺ ($M + H$)⁺ 298.1438, found 298.1434; HPLC Chiralpak AD-H (hexane/*i*-PrOH = 93:7, 1.0 mL/min) τ_{minor} = 11.3 min, τ_{major} = 15.1 min. $[\alpha]_{\text{D}}^{20}$ -11.2 (*c* 0.5, MeOH, 92% *ee*).

Recovered (S)-1f:

HPLC Chiralpak AD-H (hexane/*i*-PrOH = 93:7, 1.0 mL/min) τ_{minor} = 13.3 min, τ_{major} = 12.4 min. $[\alpha]_{\text{D}}^{20}$ 4.8 (*c* 0.5, MeOH, 98% *ee*).

(R)-Methyl 2-benzyl-5-chloroindoline-2-carboxylate (2g):



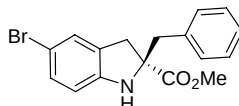
¹H NMR (400 MHz, CDCl₃) δ 7.28-7.32 (m, 3H), 7.14-7.18 (m, 2H), 6.98-7.01 (m, 2H), 6.53 (d, *J* = 8.4 Hz, 1H), 3.67 (s, 3H), 3.50 (d, *J* = 16.4 Hz, 1H), 3.30 (d, *J* = 13.2 Hz, 1H), 3.13 (d, *J* = 16.4 Hz, 1H), 3.08 (d, *J* = 13.2 Hz, 1H); ¹³C NMR (125 MHz, CDCl₃) δ 175.2, 147.9, 135.9, 129.6, 128.5, 127.5, 127.2, 124.7, 124.0, 110.5, 72.4, 52.4, 45.0, 40.0; ESI-MS m/z 302.1 ($M + H$)⁺; HRMS calcd for C₁₇H₁₇ClNO₂⁺ ($M + H$)⁺ 302.0942, found 302.0942; HPLC Chiralpak AD-H

(hexane/*i*-PrOH = 96:4, 1.0 mL/min) $\tau_{\text{minor}} = 9.4$ min, $\tau_{\text{major}} = 14.7$ min. $[\alpha]_{\text{D}}^{20} -31.2$ (c 0.5, MeOH, 90% *ee*).

Recovered (S)-1g:

HPLC Chiralpak AD-H (hexane/*i*-PrOH = 96:4, 1.0 mL/min) $\tau_{\text{minor}} = 11.4$ min, $\tau_{\text{major}} = 10.0$ min. $[\alpha]_{\text{D}}^{20} 8.8$ (c 0.5, MeOH, 92% *ee*).

(R)-Methyl 2-benzyl-5-bromoindoline-2-carboxylate (2h):

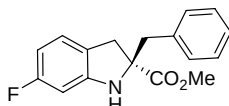


^1H NMR (400 MHz, CDCl_3) δ 7.24-7.32 (m, 3H), 7.12-7.15 (m, 4H), 6.51 (d, $J = 8.0$ Hz, 1H), 3.66 (s, 3H), 3.51 (d, $J = 16.4$ Hz, 1H), 3.30 (d, $J = 13.2$ Hz, 1H), 3.13 (d, $J = 16.4$ Hz, 1H), 3.06 (d, $J = 13.2$ Hz, 1H); ^{13}C NMR (125 MHz, CDCl_3) δ 175.2, 148.7, 135.9, 130.4, 129.6, 128.9, 128.5, 127.4, 127.2, 110.9, 72.2, 52.4, 45.1, 39.8; ESI-MS m/z 302.1 ($\text{M} + \text{H}$) $^+$; HRMS calcd for $\text{C}_{17}\text{H}_{17}\text{BrNO}_2^+$ ($\text{M} + \text{H}$) $^+$ 346.0443, 348.0422 found 346.0438, 348.0420 (1/1); HPLC Chiralpak AD-H (hexane/*i*-PrOH = 96:4, 1.0 mL/min) $\tau_{\text{minor}} = 10.5$ min, $\tau_{\text{major}} = 16.4$ min. $[\alpha]_{\text{D}}^{20} -27.2$ (c 0.5, MeOH, 93% *ee*).

Recovered (S)-1h:

HPLC Chiralpak AD-H (hexane/*i*-PrOH = 96:4, 1.0 mL/min) $\tau_{\text{minor}} = 12.6$ min, $\tau_{\text{major}} = 11.3$ min. $[\alpha]_{\text{D}}^{20} 13.6$ (c 0.5, MeOH, 86% *ee*).

(R)-Methyl 2-benzyl-6-fluoroindoline-2-carboxylate (2i):

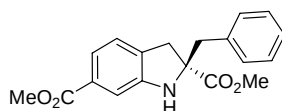


^1H NMR (400 MHz, CDCl_3) δ 7.19-7.25 (m, 3H), 7.07-7.09 (m, 2H), 6.86-6.88 (m, 1H), 6.26-6.28 (m, 2H), 3.60 (s, 3H), 3.37-3.41 (m, 1H), 3.20-3.25 (m, 1H), 2.96-3.01 (m, 2H); ^{13}C NMR (125 MHz, CDCl_3) δ 175.4, 163.7, 150.9, 135.9, 129.6, 128.4, 127.2, 125.0, 121.8, 105.3, 97.5, 72.8, 52.4, 45.1, 39.4; ESI-MS m/z 286.1 ($\text{M} + \text{H}$) $^+$; HRMS calcd for $\text{C}_{17}\text{H}_{17}\text{FNO}_2^+$ ($\text{M} + \text{H}$) $^+$ 286.1238, found 286.1233; HPLC Chiralpak AD-H (hexane/*i*-PrOH = 96:4, 1.0 mL/min) $\tau_{\text{minor}} = 9.5$ min, $\tau_{\text{major}} = 13.1$ min. $[\alpha]_{\text{D}}^{20} -24.4$ (c 0.5, MeOH, 91% *ee*).

Recovered (S)-1i:

HPLC Chiralpak AD-H (hexane/*i*-PrOH = 96:4, 1.0 mL/min) $\tau_{\text{minor}} = 11.6$ min, $\tau_{\text{major}} = 10.7$ min. $[\alpha]_{\text{D}}^{20} -2.4$ (c 0.4, MeOH, 80% *ee*).

(R)-Dimethyl 2-benzylindoline-2,6-dicarboxylate (2j):

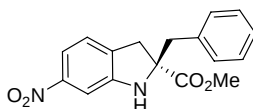


^1H NMR (500 MHz, CDCl_3) δ 7.43 (d, $J = 7.5$ Hz, 1H), 7.26-7.32 (m, 4H), 7.14-7.16 (m, 2H), 7.08-7.09 (m, 1H), 3.87 (s, 3H), 3.66 (s, 3H), 3.54 (d, $J = 16.5$ Hz, 1H), 3.30 (d, $J = 16.5$ Hz, 1H), 3.17 (d, $J = 13.0$ Hz, 1H), 3.06 (d, $J = 13.0$ Hz, 1H); ^{13}C NMR (125 MHz, CDCl_3) δ 175.2, 167.3, 149.7, 135.8, 132.0, 129.9, 129.6, 128.5, 127.2, 124.2, 121.2, 110.0, 72.1, 52.4, 51.9, 45.1, 40.0; ESI-MS m/z 326.1 ($\text{M} + \text{H}$) $^+$; HRMS calcd for $\text{C}_{19}\text{H}_{20}\text{NO}_4$ $^+$ ($\text{M} + \text{H}$) $^+$ 326.1387, found 326.1385; HPLC Chiralpak AD-H (hexane/*i*-PrOH = 95:5, 1.0 mL/min) $\tau_{\text{minor}} = 30.7$ min, $\tau_{\text{major}} = 46.3$ min. $[\alpha]_{\text{D}}^{20} -13.8$ (c 0.5, MeOH, 83% *ee*).

Recovered (S)-1j:

HPLC Chiralpak AD-H (hexane/*i*-PrOH = 95:5, 1.0 mL/min) $\tau_{\text{minor}} = 23.5$ min, $\tau_{\text{major}} = 19.8$ min. $[\alpha]_{\text{D}}^{20} -2.8$ (c 0.5, MeOH, 96% *ee*).

(R)-Methyl 2-benzyl-6-nitroindoline-2-carboxylate (2k):

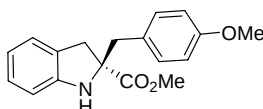


^1H NMR (500 MHz, CDCl_3) δ 7.60 (d, $J = 8.0$ Hz, 1H), 7.41 (s, 1H), 7.26-7.32 (m, 3H), 7.11-7.16 (m, 3H), 3.69 (s, 3H), 3.58 (d, $J = 17.0$ Hz, 1H), 3.33 (d, $J = 13.5$ Hz, 1H), 3.19 (d, $J = 17.0$ Hz, 1H), 3.07 (d, $J = 13.5$ Hz, 1H); ^{13}C NMR (125 MHz, CDCl_3) δ 174.8, 150.4, 148.6, 135.4, 134.0, 129.6, 128.6, 127.4, 124.4, 114.9, 103.6, 72.5, 52.6, 45.2, 39.6; ESI-MS m/z 313.1 ($\text{M} + \text{H}$) $^+$; HRMS calcd for $\text{C}_{17}\text{H}_{17}\text{N}_2\text{O}_4$ $^+$ ($\text{M} + \text{H}$) $^+$ 313.1183, found 313.1181; HPLC Chiralpak AD-H (hexane/*i*-PrOH = 90:10, 1.0 mL/min) $\tau_{\text{minor}} = 17.2$ min, $\tau_{\text{major}} = 23.6$ min. $[\alpha]_{\text{D}}^{20} -21.2$ (c 0.5, MeOH, 90% *ee*).

Recovered (S)-1k:

HPLC Chiralpak AD-H (hexane/*i*-PrOH = 90:10, 1.0 mL/min) $\tau_{\text{minor}} = 18.9$ min, $\tau_{\text{major}} = 17.4$ min. $[\alpha]_{\text{D}}^{20} -3.6$ (c 0.5, MeOH, 80% *ee*).

(R)-Methyl 2-(4-methoxybenzyl)indoline-2-carboxylate (2l):



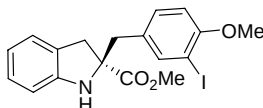
^1H NMR (400 MHz, CDCl_3) δ 7.03-7.26 (m, 4H), 6.84 (d, $J = 8.4$ Hz, 2H), 6.74 (t, $J = 7.2$ Hz, 1H), 6.67 (d, $J = 7.2$ Hz, 1H), 3.80 (s, 3H), 3.67 (s, 3H), 3.53 (d, $J = 16.0$ Hz, 1H), 3.26 (d, $J = 14.0$ Hz, 1H), 3.15 (d, $J = 16.0$ Hz, 1H), 3.03 (d, $J = 14.0$ Hz, 1H); ^{13}C NMR (125 MHz, CDCl_3) δ 175.7, 158.7, 149.3, 130.6, 128.2, 127.7, 126.6, 124.5, 119.3, 113.8, 109.8, 72.1, 55.2, 52.3, 44.3, 40.1; ESI-MS m/z 298.1 ($\text{M} + \text{H}$) $^+$; HRMS calcd for $\text{C}_{18}\text{H}_{20}\text{NO}_3$ $^+$ ($\text{M} + \text{H}$) $^+$ 298.1438, found 298.1432; HPLC Chiralpak AD-H (hexane/*i*-PrOH = 95:5, 1.0 mL/min) $\tau_{\text{minor}} = 12.0$ min, $\tau_{\text{major}} =$

17.6 min. $[\alpha]_D^{20}$ -19.0 (c 0.5, MeOH, 90% ee).

Recovered (S)-1l:

HPLC Chiralpak AD-H (hexane/*i*-PrOH = 95:5, 1.0 mL/min) $\tau_{\text{minor}} = 15.3$ min, $\tau_{\text{major}} = 19.6$ min. $[\alpha]_D^{20}$ -5.6 (c 0.5, MeOH, 86% ee).

(R)-Methyl 2-(3-iodo-4-methoxybenzyl)indoline-2-carboxylate (2m):

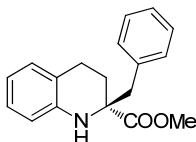


^1H NMR (500 MHz, CDCl_3) δ 7.51 (s, 1H), 7.04 (d, $J = 8.0$ Hz, 1H), 6.94-6.98 (m, 2H), 6.58-6.69 (m, 3H), 3.77 (s, 3H), 3.59 (s, 3H), 3.43 (d, $J = 16.0$ Hz, 1H), 3.12 (d, $J = 13.5$ Hz, 1H), 3.03 (d, $J = 16.0$ Hz, 1H), 2.89 (d, $J = 13.5$ Hz, 1H); ^{13}C NMR (125 MHz, CDCl_3) δ 175.6, 157.2, 149.4, 140.4, 130.7, 130.4, 127.7, 126.4, 124.5, 119.3, 110.7, 109.7, 85.8, 71.9, 56.3, 52.4, 43.9, 40.0; ESI-MS m/z 424.3 ($\text{M} + \text{H}$) $^+$; HRMS calcd for $\text{C}_{18}\text{H}_{19}\text{INO}_3$ ($\text{M} + \text{H}$) $^+$ 424.0404, found 424.0409; HPLC Chiralpak AD-H (hexane/*i*-PrOH = 96:4, 1.0 mL/min) $\tau_{\text{minor}} = 16.7$ min, $\tau_{\text{major}} = 19.5$ min. $[\alpha]_D^{20}$ -18.0 (c 0.5, MeOH, 86% ee).

Recovered (S)-1m:

HPLC Chiralpak AD-H (hexane/*i*-PrOH = 96:4, 1.0 mL/min) $\tau_{\text{minor}} = 15.8$ min, $\tau_{\text{major}} = 20.5$ min. $[\alpha]_D^{20}$ -10.8 (c 0.5, MeOH, 96% ee).

(S)-Methyl 2-benzyl-1,2,3,4-tetrahydroquinoline-2-carboxylate (4a):

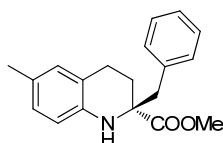


^1H NMR (400 MHz, CDCl_3) δ 7.26-7.33 (m, 3H), 7.12 (d, $J = 6.8$ Hz, 2H), 6.96-7.02 (m, 2H), 6.66 (t, $J = 7.2$ Hz, 1H), 6.55 (d, $J = 8.0$ Hz, 1H), 3.64 (s, 3H), 3.19 (d, $J = 13.2$ Hz, 1H), 2.94 (d, $J = 13.2$ Hz, 1H), 2.68-2.85 (m, 2H), 2.34-2.40 (m, 1H), 2.00-2.07 (m, 1H); ^{13}C NMR (125 MHz, CDCl_3) δ 175.1, 142.8, 135.5, 129.9, 129.1, 127.1, 127.0, 120.2, 117.8, 114.8, 61.5, 52.1, 45.4, 30.4, 24.1; ESI-MS m/z 282.1 ($\text{M} + \text{H}$) $^+$; HRMS calcd for $\text{C}_{18}\text{H}_{20}\text{NO}_2$ ($\text{M} + \text{H}$) $^+$ 282.1489, found 282.1498; HPLC Chiralpak AD-H (hexane/*i*-PrOH = 95:5, 1.0 mL/min) $\tau_{\text{minor}} = 7.5$ min, $\tau_{\text{major}} = 9.2$ min. $[\alpha]_D^{20}$ 10.8 (c 0.5, MeOH, 95% ee).

Recovered (R)-3a:

HPLC Chiralpak AD-H (hexane/*i*-PrOH = 95:5, 1.0 mL/min) $\tau_{\text{minor}} = 13.5$ min, $\tau_{\text{major}} = 19.3$ min. $[\alpha]_D^{20}$ 12.6 (c 1.0, MeOH, 89% ee).

(S)-Methyl 2-benzyl-6-methyl-1,2,3,4-tetrahydroquinoline-2-carboxylate (4b):

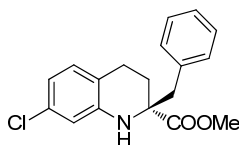


^1H NMR (400 MHz, CDCl_3) δ 7.26-7.32 (m, 3H), 7.13 (m, 2H), 6.80 (m, 2H), 6.51 (d, J = 8.0 Hz, 1H), 3.63 (s, 3H), 3.19 (d, J = 13.8 Hz, 1H), 2.97 (d, J = 13.8 Hz, 1H), 2.69-2.77 (m, 2H), 2.33-2.39 (m, 1H), 2.21 (s, 3H), 2.01-2.06 (m, 1H); ^{13}C NMR (125 MHz, CDCl_3) δ 175.0, 140.2, 135.5, 129.9, 129.6, 128.4, 127.6, 127.3, 120.4, 115.1, 61.7, 52.1, 45.3, 30.4, 24.1, 20.4; ESI-MS m/z 296.1 ($\text{M} + \text{H}$) $^+$; HRMS calcd for $\text{C}_{19}\text{H}_{22}\text{NO}_2$ $^+$ ($\text{M} + \text{H}$) $^+$ 296.1645, found 296.1649; HPLC Chiralpak AD-H (hexane/*i*-PrOH = 97:3, 1.0 mL/min) τ_{minor} = 7.7 min, τ_{major} = 15.0 min. $[\alpha]_{\text{D}}^{20}$ 24.8 (c 0.5, MeOH, 95% *ee*).

Recovered (R)-3b:

HPLC Chiralpak AD-H (hexane/*i*-PrOH = 97:3, 1.0 mL/min) τ_{minor} = 16.0 min, τ_{major} = 21.5 min. $[\alpha]_{\text{D}}^{20}$ 14.8 (c 1.0, MeOH, 89% *ee*).

(S)-Methyl 2-benzyl-7-chloro-1,2,3,4-tetrahydroquinoline-2-carboxylate (4c):

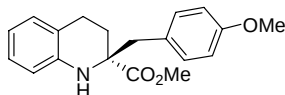


^1H NMR (400 MHz, CDCl_3) δ 7.26-7.32 (m, 3H), 7.12 (m, 2H), 6.86 (d, J = 8.0 Hz, 1H), 6.60 (dd, J = 8.0 Hz, 2.0 Hz, 1H), 6.5 (d, J = 2.0 Hz, 1H), 3.65 (s, 3H), 3.20 (d, J = 13.8 Hz, 1H), 2.90 (d, J = 13.8 Hz, 1H), 2.73-2.76 (m, 1H), 2.64-2.68 (m, 1H), 2.32-2.38 (m, 1H), 1.96-2.03 (m, 1H); ^{13}C NMR (125 MHz, CDCl_3) δ 174.7, 143.9, 135.2, 132.2, 130.0, 129.8, 128.5, 127.3, 118.6, 117.6, 114.3, 61.3, 52.2, 45.4, 30.3, 23.7; ESI-MS m/z 316.1 ($\text{M} + \text{H}$) $^+$; HRMS calcd for $\text{C}_{18}\text{H}_{19}\text{ClNO}_2$ $^+$ ($\text{M} + \text{H}$) $^+$ 316.1099, found 316.1099; HPLC Chiralpak AD-H (hexane/*i*-PrOH = 95:5, 1.0 mL/min) τ_{minor} = 7.6 min, τ_{major} = 9.5 min. $[\alpha]_{\text{D}}^{20}$ 23.4 (c 0.5, MeOH, 95% *ee*).

Recovered (R)-3c:

HPLC Chiralpak AD-H (hexane/*i*-PrOH = 95:5, 1.0 mL/min) τ_{minor} = 12.5 min, τ_{major} = 14.4 min. $[\alpha]_{\text{D}}^{20}$ 13.6 (c 1.0, MeOH, 88% *ee*).

(S)-Methyl 2-(4-methoxybenzyl)-1,2,3,4-tetrahydroquinoline-2-carboxylate (4d):



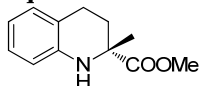
^1H NMR (400 MHz, CDCl_3) δ 7.04 (d, J = 8.4 Hz, 2H), 6.95-7.02 (m, 2H), 6.84 (d, J = 8.4 Hz, 2H), 6.65 (t, J = 7.2 Hz, 1H), 6.54 (d, J = 8.0 Hz, 1H), 3.80 (s, 3H), 3.64 (s, 3H), 3.14 (d, J = 13.2 Hz, 1H), 2.87 (d, J = 13.2 Hz, 1H), 2.66-2.84 (m, 2H), 2.33-2.38 (m, 1H), 1.97-2.04 (m, 1H); ^{13}C NMR (125 MHz, CDCl_3) δ 175.2, 158.8, 142.9, 130.8, 129.0, 127.5, 127.0, 120.2, 117.7, 114.8, 113.9, 61.5, 55.2, 52.1, 44.6, 30.3, 24.1; ESI-MS m/z 312.3 ($\text{M} + \text{H}$) $^+$; HRMS calcd for $\text{C}_{19}\text{H}_{22}\text{NO}_3$

(M + H)⁺ 312.1594, found 312.1596; HPLC Chiralpak AD-H (hexane/*i*-PrOH = 96:4, 1.0 mL/min) $\tau_{\text{minor}} = 11.9$ min, $\tau_{\text{major}} = 14.4$ min. $[\alpha]_{\text{D}}^{20} 16.0$ (c 0.5, MeOH, 97% *ee*).

Recovered (R)-3d:

HPLC Chiralpak AD-H (hexane/*i*-PrOH = 96:4, 1.0 mL/min) $\tau_{\text{minor}} = 21.7$ min, $\tau_{\text{major}} = 30.1$ min. $[\alpha]_{\text{D}}^{20} 14.6$ (c 1.0, MeOH, 85% *ee*).

(R)-Methyl 2-methyl-1,2,3,4-tetrahydroquinoline-2-carboxylate (4e):

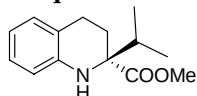


¹H NMR (500 MHz, CDCl₃) δ 7.00 (t, *J* = 7.5 Hz, 1H), 6.96 (d, *J* = 7.5 Hz, 1H), 6.84 (t, *J* = 7.5 Hz, 1H), 6.60 (d, *J* = 7.5 Hz, 1H), 3.71 (s, 3H), 2.72-2.74 (m, 2H), 2.28-2.33 (m, 1H), 1.85-1.91 (m, 1H), 1.46 (s, 3H); ¹³C NMR (125 MHz, CDCl₃) δ 176.5, 143.0, 129.1, 126.9, 120.3, 117.9, 114.7, 57.3, 52.4, 30.7, 26.8, 24.2; ESI-MS *m/z* 206.1 (M + H)⁺; HRMS calcd for C₁₂H₁₆NO₂⁺ (M + H)⁺ 206.1176, found 206.1175; HPLC Chiralpak OD-H (hexane/*i*-PrOH = 95:5, 1.0 mL/min) $\tau_{\text{major}} = 7.0$ min, $\tau_{\text{minor}} = 7.6$ min. $[\alpha]_{\text{D}}^{20} -4.7$ (c 0.5, CHCl₃, 80% *ee*).

Recovered (S)-3e:

HPLC Chiralpak OD-H (hexane/*i*-PrOH = 95:5, 1.0 mL/min) $\tau_{\text{major}} = 12.4$ min, $\tau_{\text{minor}} = 13.8$ min. $[\alpha]_{\text{D}}^{20} 9.4$ (c 1.0, MeOH, 88% *ee*).

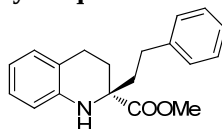
(S)-Methyl 2-isopropyl-1,2,3,4-tetrahydroquinoline-2-carboxylate (4f):



¹H NMR (400 MHz, CDCl₃) δ 7.00 (t, *J* = 7.6 Hz, 1H), 6.94 (d, *J* = 7.6 Hz, 1H), 6.59-6.65 (m, 2H), 3.69 (s, 3H), 2.67-2.72 (m, 2H), 2.19-2.24 (m, 1H), 2.03-2.09 (m, 1H), 1.89-1.97 (m, 1H), 0.97 (d, *J* = 6.8 Hz, 6H); ¹³C NMR (125 MHz, CDCl₃) δ 175.8, 143.7, 128.9, 126.7, 120.9, 117.7, 114.9, 64.1, 51.8, 35.6, 26.7, 24.5, 17.2, 16.7; ESI-MS *m/z* 234.1 (M + H)⁺; HRMS calcd for C₁₄H₂₀NO₂⁺ (M + H)⁺ 234.1489, found 234.1495; HPLC Chiralpak AD-H (hexane/*i*-PrOH = 97:3, 1.0 mL/min) $\tau_{\text{minor}} = 6.6$ min, $\tau_{\text{major}} = 7.9$ min. $[\alpha]_{\text{D}}^{20} -6.4$ (c 0.5, CHCl₃, 85% *ee*).

Recovered (R)-3f: HPLC Chiralpak AD-H (hexane/*i*-PrOH = 97:3, 1.0 mL/min) $\tau_{\text{minor}} = 9.4$ min, $\tau_{\text{major}} = 10.5$ min. $[\alpha]_{\text{D}}^{20} 6.7$ (c 0.5, CHCl₃, 98% *ee*).

(R)-Methyl 2-phenethyl-1,2,3,4-tetrahydroquinoline-2-carboxylate (4g):



¹H NMR (400 MHz, CDCl₃) δ 7.28 (m, 2H), 7.16-7.21 (m, 3H), 6.95-7.02 (m, 2H), 6.64-6.70 (m, 2H), 3.78 (s, 3H), 2.69-2.78 (m, 3H), 2.56-2.64 (m, 1H), 2.24-2.30 (m, 1H), 2.00-2.12 (m, 3H); ¹³C NMR (125 MHz, CDCl₃) δ 175.7, 142.4, 141.2, 129.0, 128.5, 128.3, 127.0, 126.0, 120.5, 117.9, 115.0, 60.6, 52.3, 41.1, 30.1, 29.4, 24.0; ESI-MS *m/z* 296.1 (M + H)⁺; HRMS calcd for C₁₉H₂₂NO₂⁺ (M + H)⁺ 296.1645, found 296.1646; HPLC Chiralpak AD-H (hexane/*i*-PrOH = 97:3,

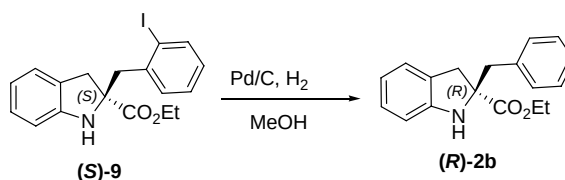
1.0 mL/min) $\tau_{\text{minor}} = 12.3$ min, $\tau_{\text{major}} = 15.0$ min. $[\alpha]_{\text{D}}^{20} 6.0$ (c 0.5, MeOH, 96% ee).

Recovered (S)-3g:

HPLC Chiralpak AD-H (hexane/*i*-PrOH = 97:3, 1.0 mL/min) $\tau_{\text{minor}} = 18.6$ min, $\tau_{\text{major}} = 19.2$ min. $[\alpha]_{\text{D}}^{20} -8.3$ (c 1.0, MeOH, 90% ee).

4. Determination of the Absolute Configuration of the Products:

The absolute configuration of the coupling product **2b** was assigned to be *R* by comparing with (*R*)-**2b**, which was obtained by hydrogenation of (*S*)-ethyl 2-(2-iodobenzyl)indoline-2-carboxylate **9**. (*S*)-**9** was synthesized according to our previous communication.² The absolute configurations of other coupling products were assigned to be *R* by comparing with **2b**. The absolute configurations of recovered starting materials (**1a-1m**) were assigned to be *S* correspondingly.



(*R*)-**2b** synthesized from (*S*)-**9**: $[\alpha]_{\text{D}}^{\text{RT}} -23.2$ (c 0.5, MeOH, 96% ee).

2b synthesized from the kinetic resolution of *rac*-**1b**: $[\alpha]_{\text{D}}^{\text{RT}} -21.7$ (c 0.5, MeOH, 89% ee).

The absolute configuration of recovered **3d** (>98%ee after recrystallization) was determined as *R* through X-ray experiment (Figure 1). The absolute configuration of coupling product **4d** was assigned to be *S* correspondingly. The absolute configurations of other coupling 1,2,3,4-tetrahydroquinoline products (**4a-c** and **4e-g**) and recovered starting materials (**3a-c** and **3e-g**) were assigned by analogue to **3d** and **4d**, respectively.

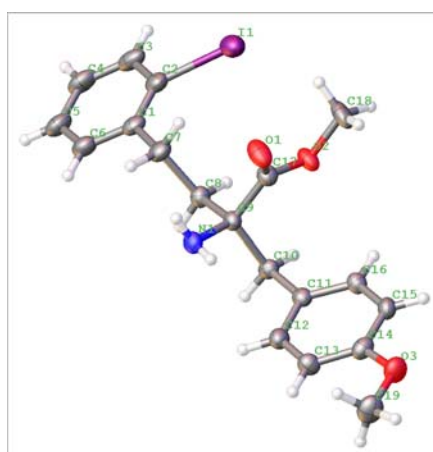
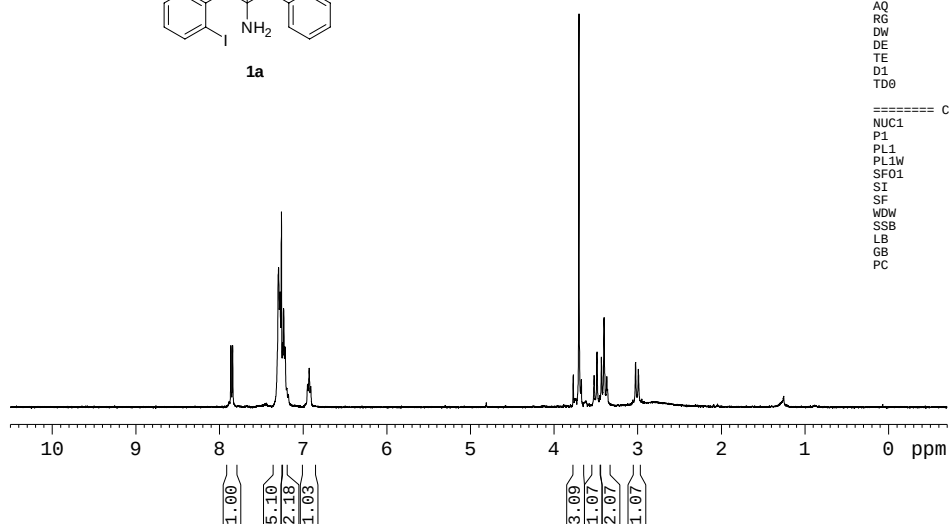
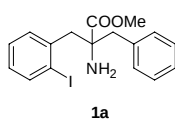


Fig. 1 Molecular structure of compound **3d** (C₁₉H₂₂INO₃).

5. References:

- (1) Ito, Y.; Higuchi, N.; Murakami, M. *Tetrahedron Lett.* **1988**, 29, 5151.
- (2) Zhou, F.; Guo, J.; Liu, J.; Ding, K.; Yu, S.; Cai, Q. *J. Am. Chem. Soc.* **2012**, 134, 14326.

1001



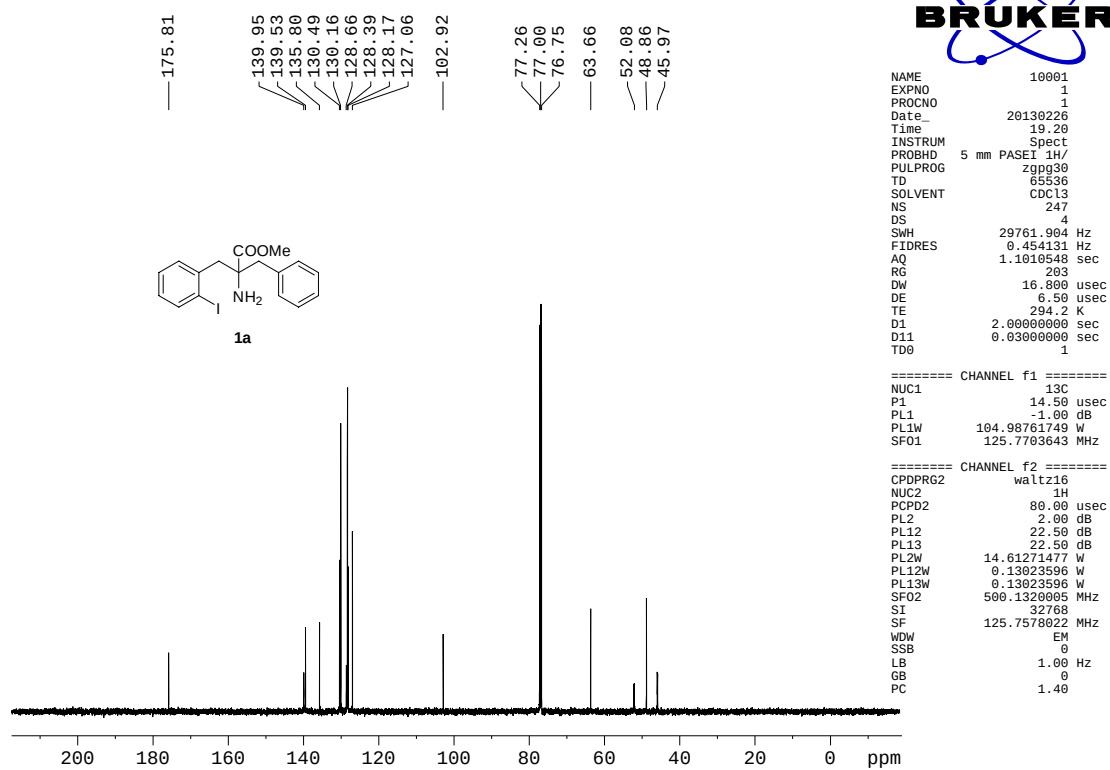
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TD0	1	

```

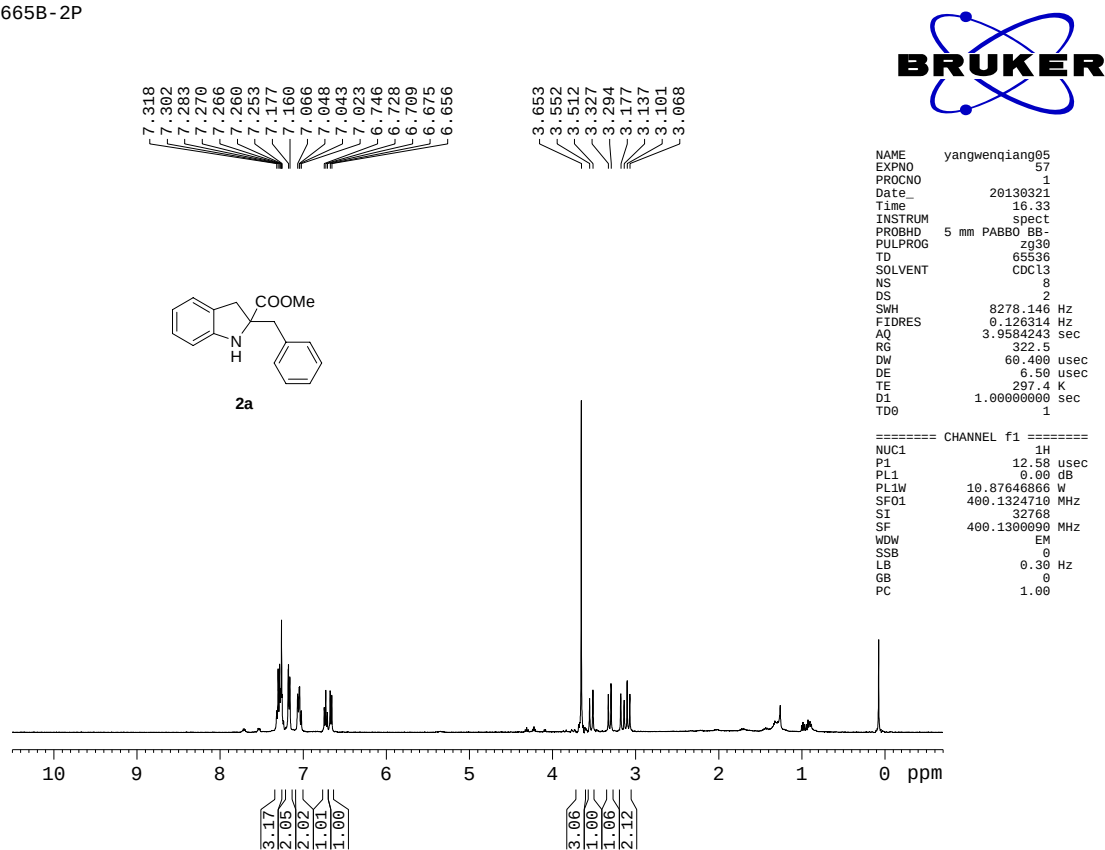
===== CHANNEL f1 =====
NUC1                1H
P1                  12.58 usec
PL1                 0.00 dB
PL1W                10.87646866 W
SF01                400.1324710 MHz
SI                  32768
SF                  400.1300092 MHz
WDW                  no
SSB                  0
LB                   0.00 Hz
GB                   0
PC                   1.00

```

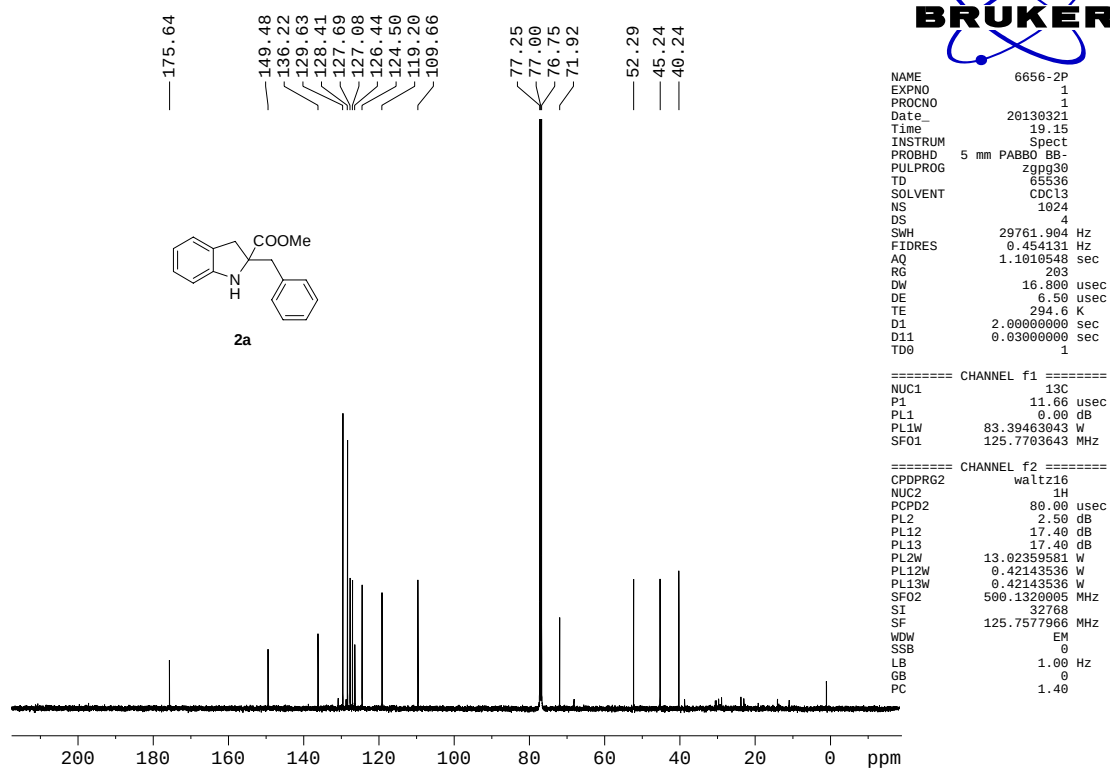
10001



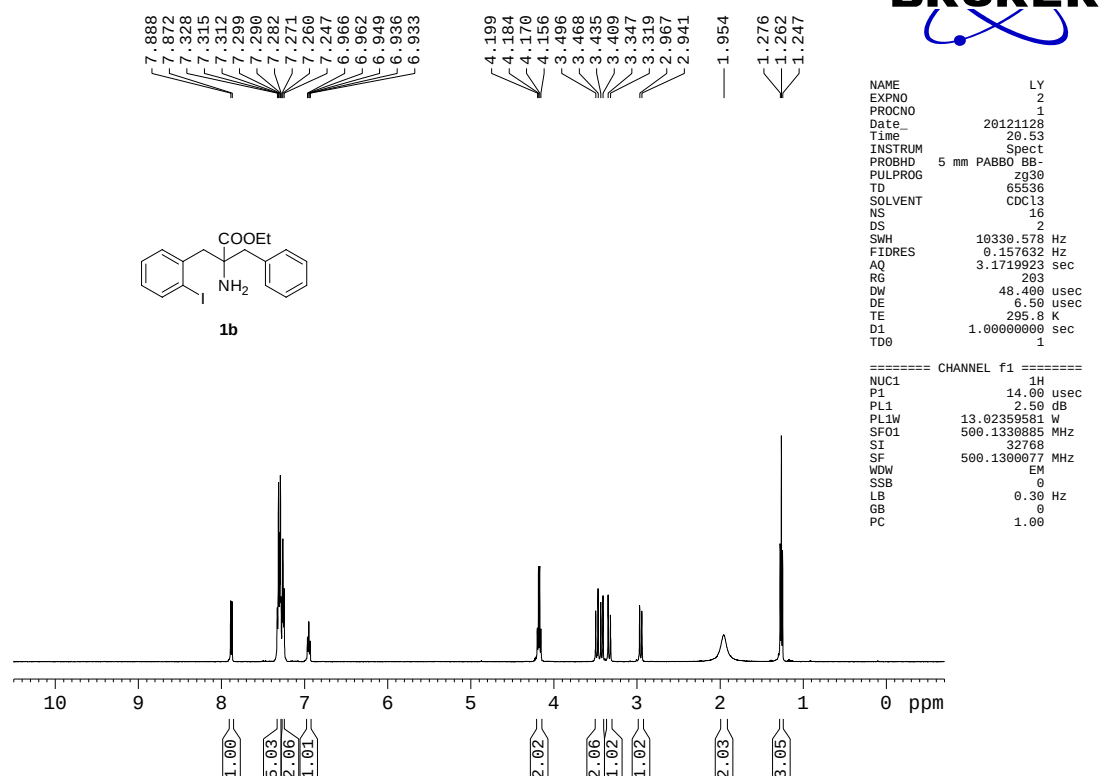
665B-2P



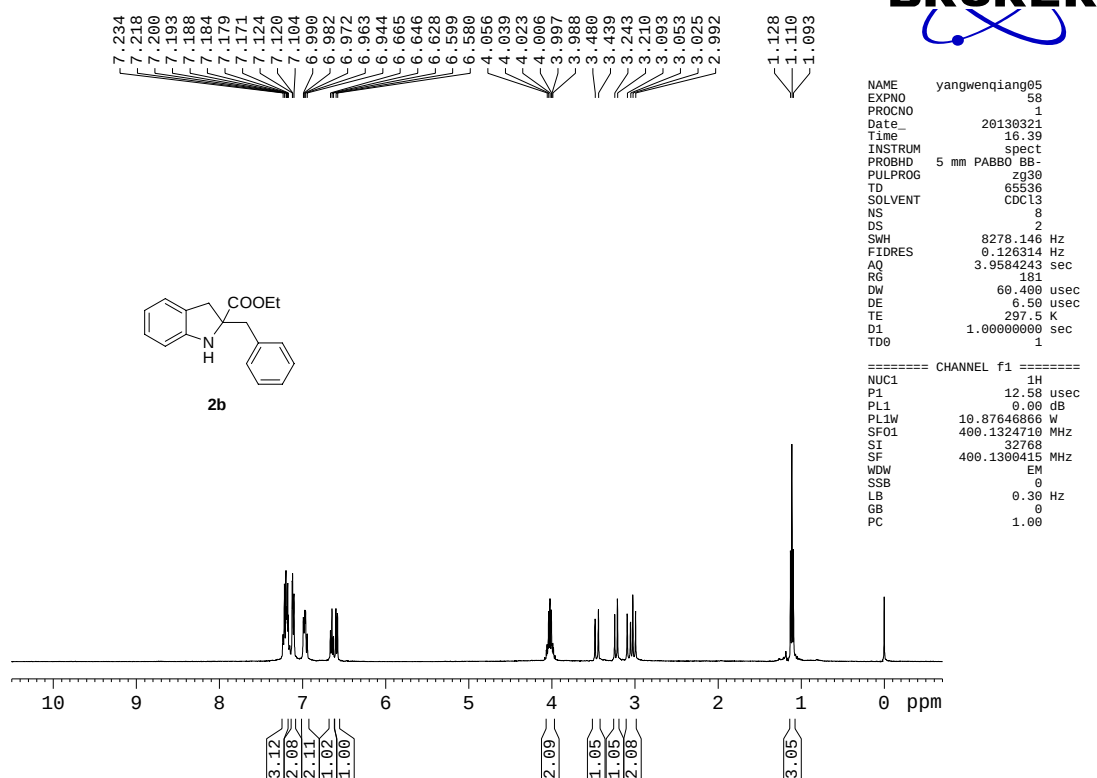
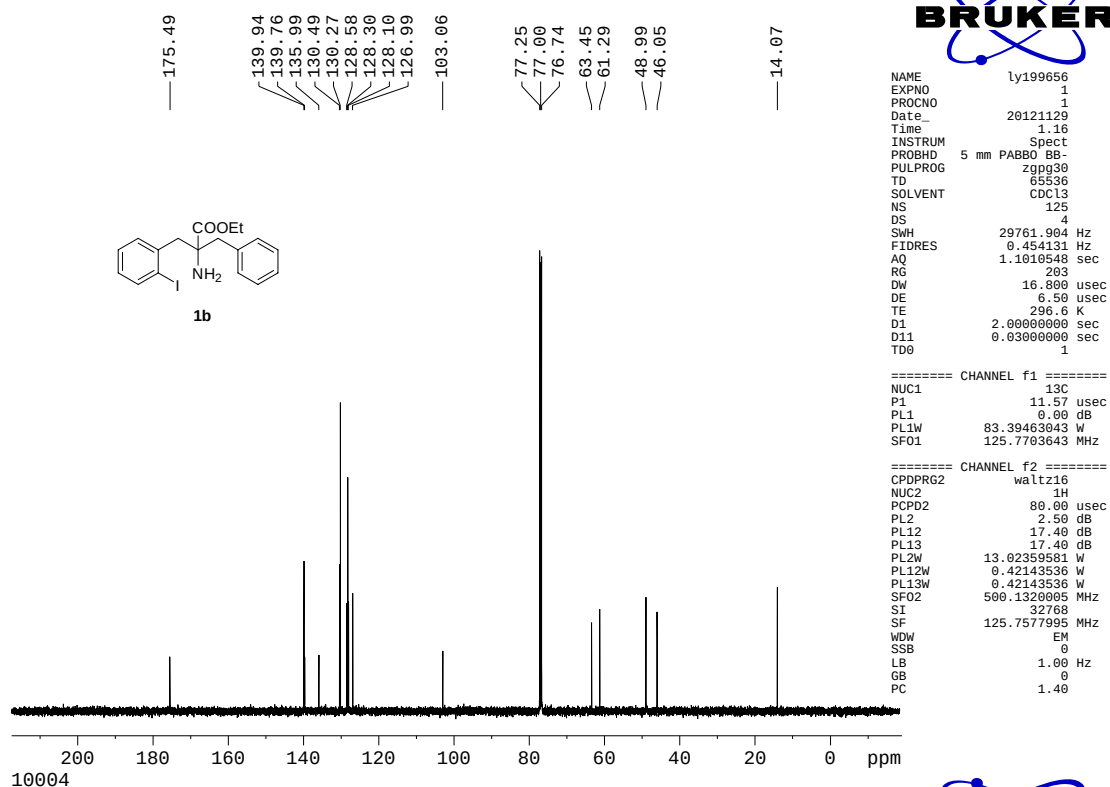
6656-2P



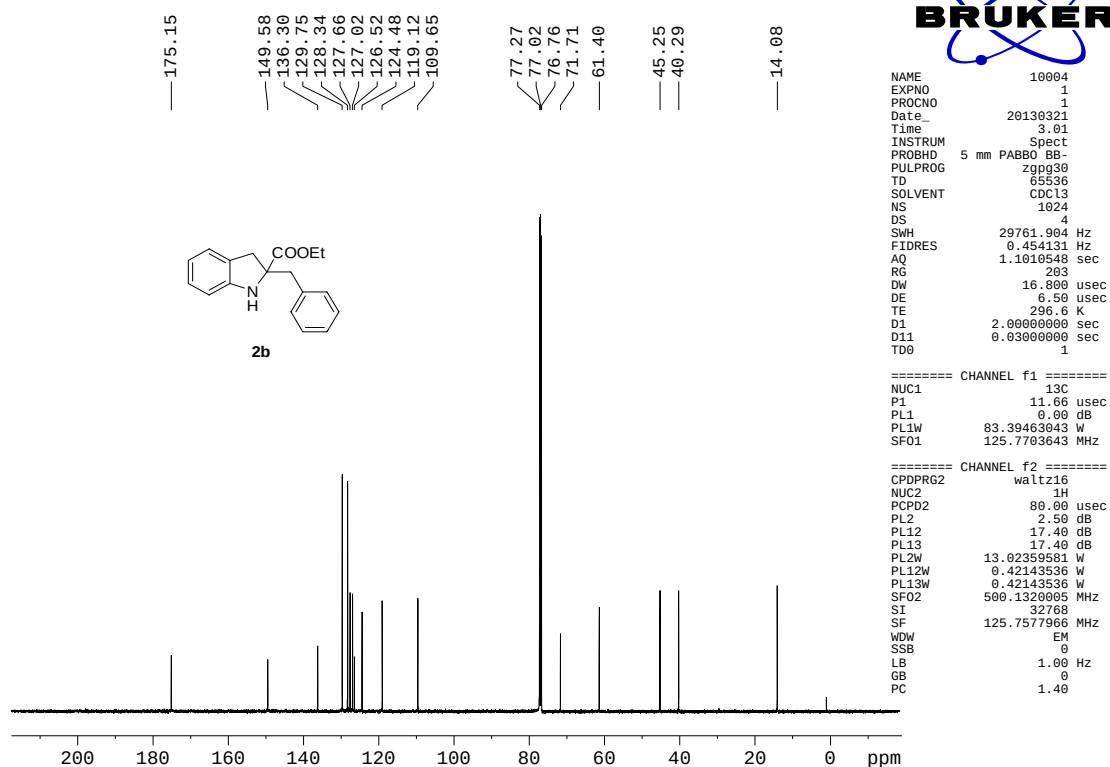
LY-199657



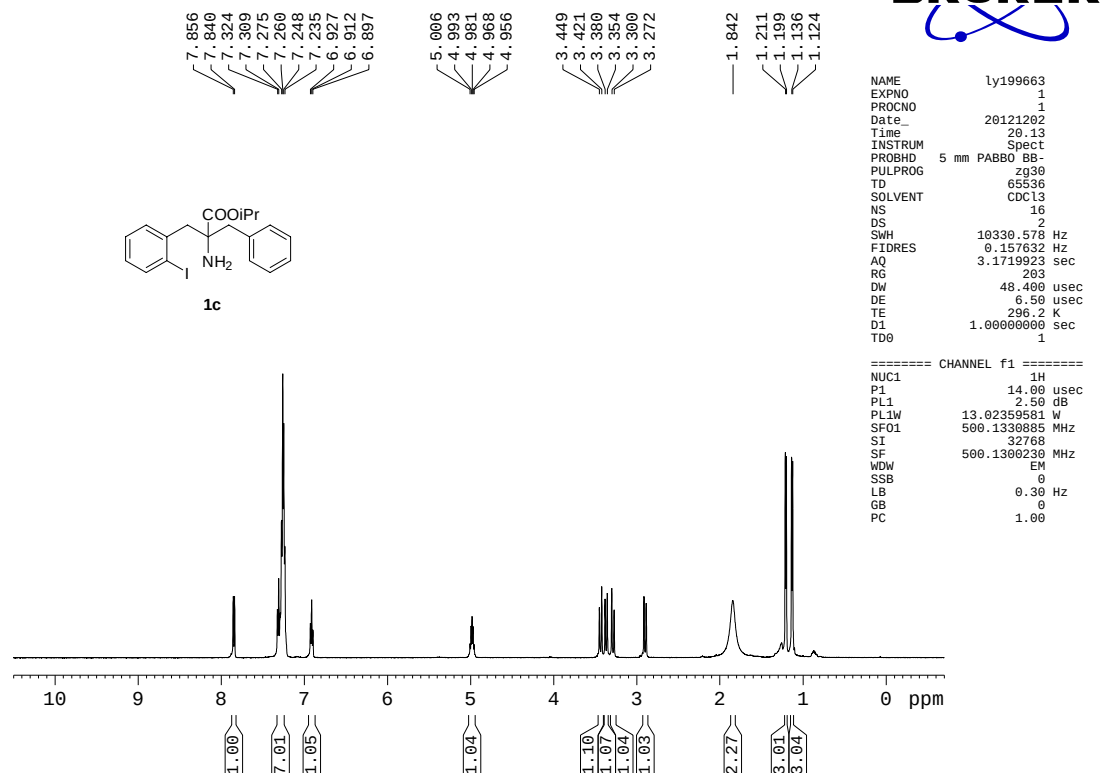
LY-199656



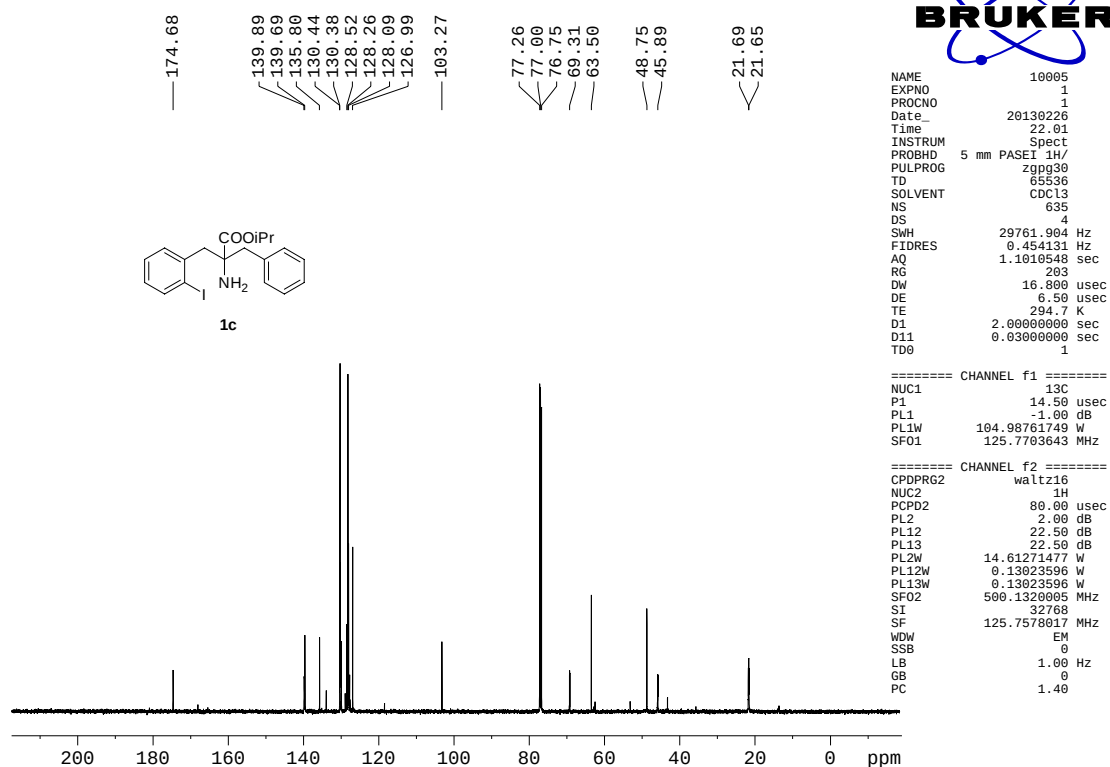
10004



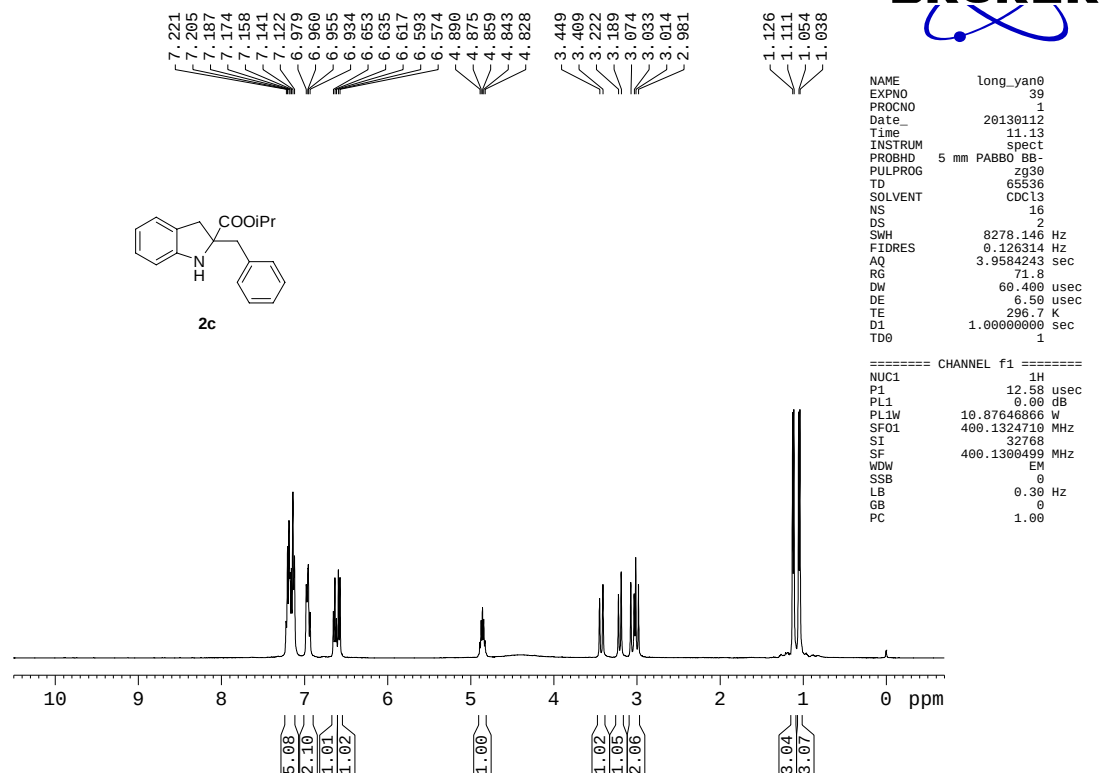
LY-199663



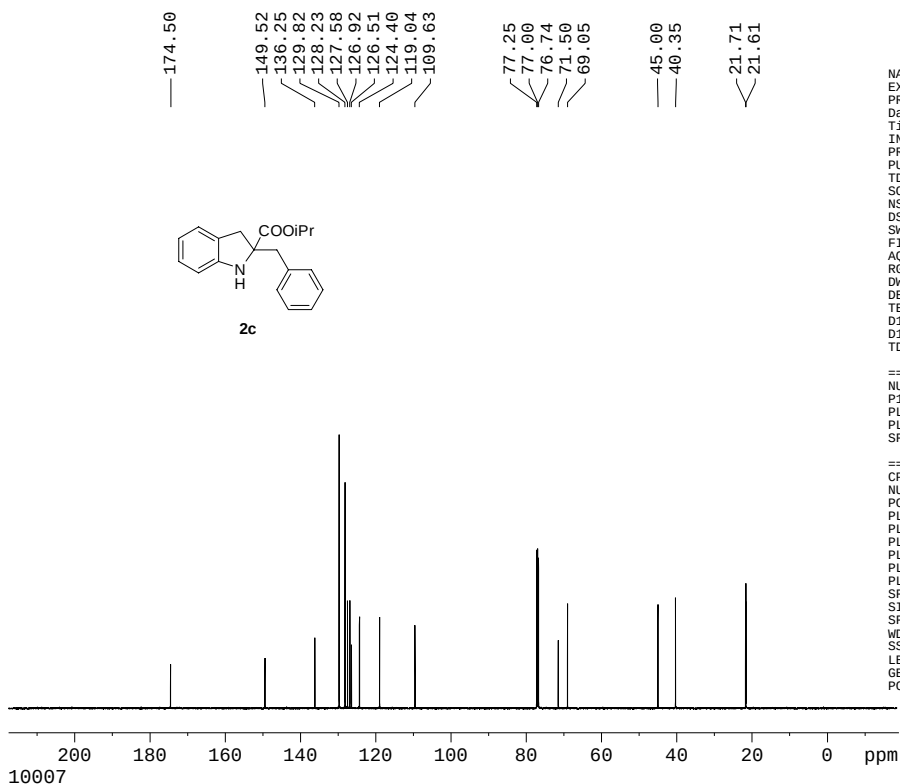
10005



LY-199672



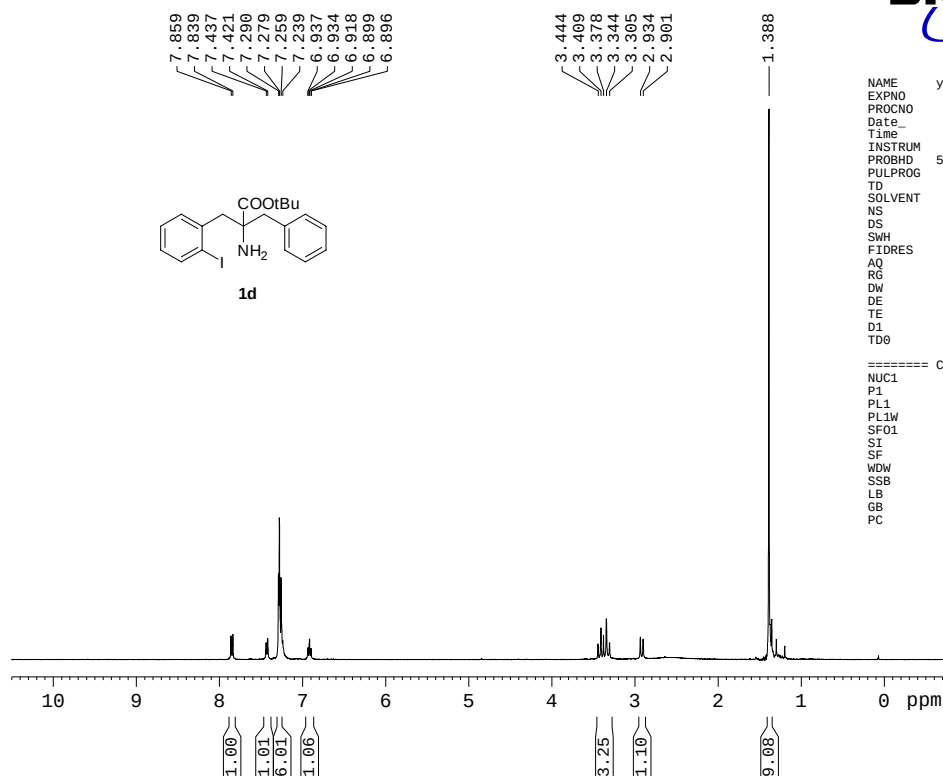
ly199672



NAME ly199672
EXPNO 1
PROCNO 1
Date_ 20130114
Time 21.38
INSTRUM Spect
PROBHD 5 mm PABBO BB-
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 278
DS 4
SWH 29761.904 Hz
FIDRES 0.454131 Hz
AQ 1.1010548 sec
RG 203
DW 16.800 usec
DE 6.50 usec
TE 295.8 K
D1 2.0000000 sec
D11 0.0300000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 13C
P1 11.66 usec
PL1 0.00 dB
PL1W 83.39463043 W
SF01 125.7703643 MHz

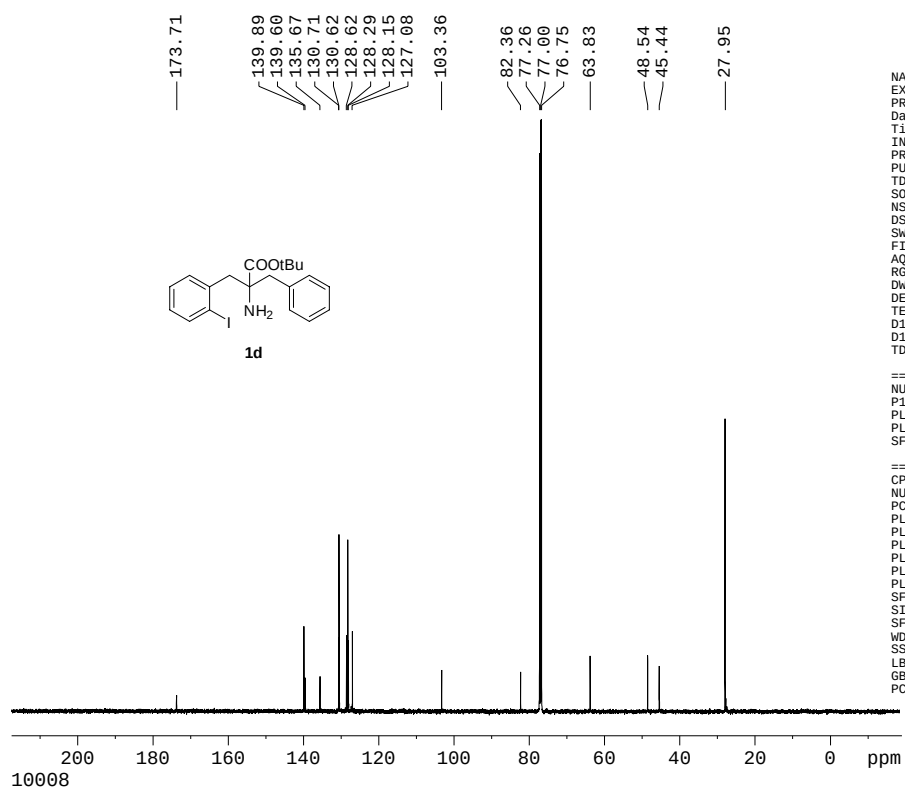
===== CHANNEL f2 =====
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 2.50 dB
PL12 17.40 dB
PL13 17.40 dB
PL2W 13.02359581 W
PL12W 0.42143536 W
PL13W 0.42143536 W
SF02 500.1320095 MHz
SI 32768
SF 125.7578086 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40



NAME yangwenqiang05
EXPNO 27
PROCNO 1
Date_ 20130124
Time 13.53
INSTRUM spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 8
DS 2
SWH 8278.146 Hz
FIDRES 0.126314 Hz
AQ 3.9584243 sec
RG 256
DW 60.400 usec
DE 0.50 usec
TE 296.9 K
D1 1.0000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 1H
P1 12.58 usec
PL1 0.00 dB
PL1W 10.87646866 W
SF01 400.1324710 MHz
SI 32768
SF 400.1300095 MHz
WDW no
SSB 0
LB 0.00 Hz
GB 0
PC 1.00

10007



```

NAME      10007
EXPNO     1
PROCNO    1
Date_     20130321
Time      0.00
INSTRUM   Spect
PROBHD    5 mm PABBO BB-
PULPROG   zgpg30
TD         65536
SOLVENT   CDCl3
NS         1024
DS         4
SWH        29761.904 Hz
FIDRES     0.454131 Hz
AQ         1.1010548 sec
RG         203
DW         16.800 usec
DE         6.50 usec
TE         296.6 K
D1         2.0000000 sec
D11        0.0300000 sec
TD0        1
  
```

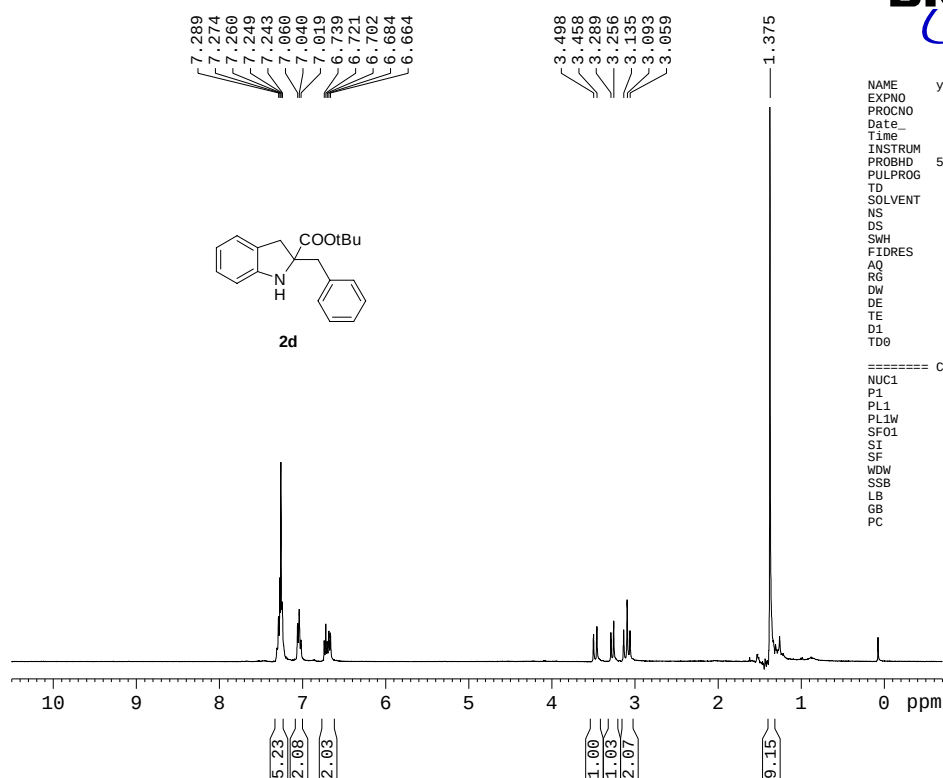
```

===== CHANNEL f1 =====
NUC1      13C
P1        11.66 usec
PL1       0.00 dB
PL1W      83.39463043 W
SF01      125.7703643 MHz
  
```

```

===== CHANNEL f2 =====
CPDPRG2   waltz16
NUC2       1H
PCPD2     80.00 usec
PL2        2.50 dB
PL12       17.40 dB
PL13       17.40 dB
PL12W     13.02359581 W
PL12W     0.42143536 W
PL13W     0.42143536 W
SF02      500.1320005 MHz
SI         32768
SF        125.7577958 MHz
WDW        EM
SSB         0
LB         1.00 Hz
GB          0
PC          1.40
  
```

10008



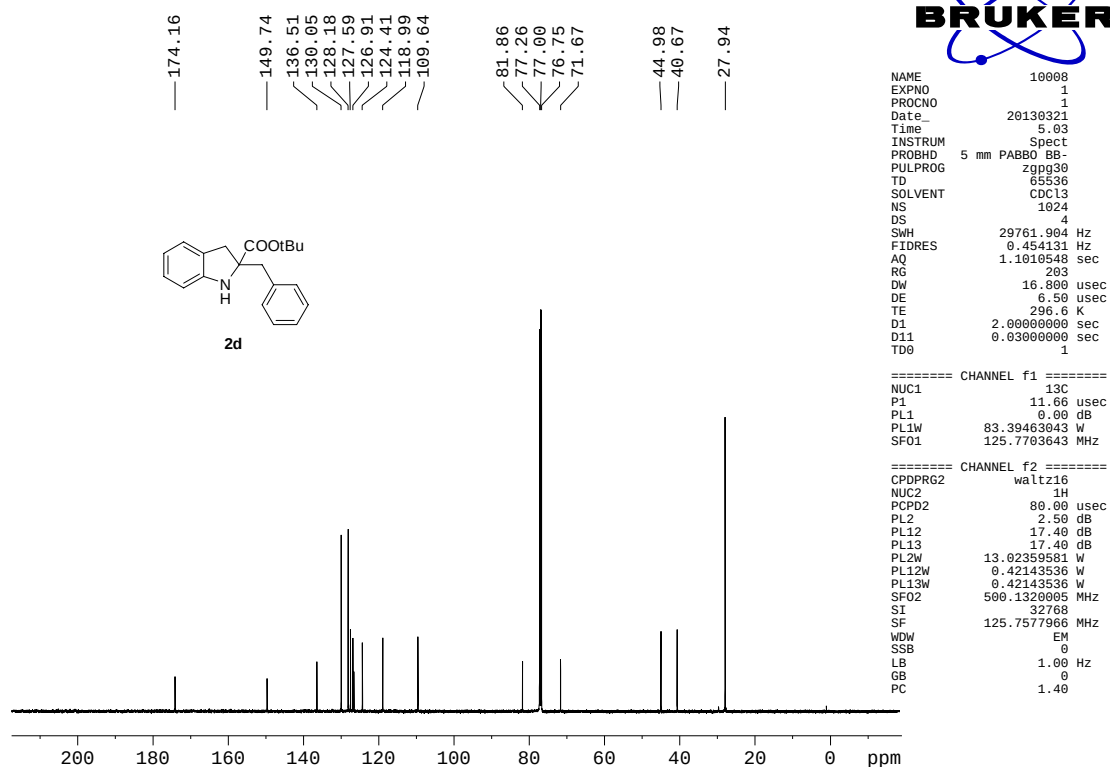
```

NAME      yangwenqiang05
EXPNO     55
PROCNO    1
Date_     20130321
Time      16.20
INSTRUM   spect
PROBHD    5 mm PABBO BB-
PULPROG   zg30
TD         65536
SOLVENT   CDCl3
NS         8
DS         2
SWH        8278.146 Hz
FIDRES     0.126314 Hz
AQ         3.9584243 sec
RG         256
DW         60.400 usec
DE         6.50 usec
TE         297.4 K
D1         1.0000000 sec
TD0        1
  
```

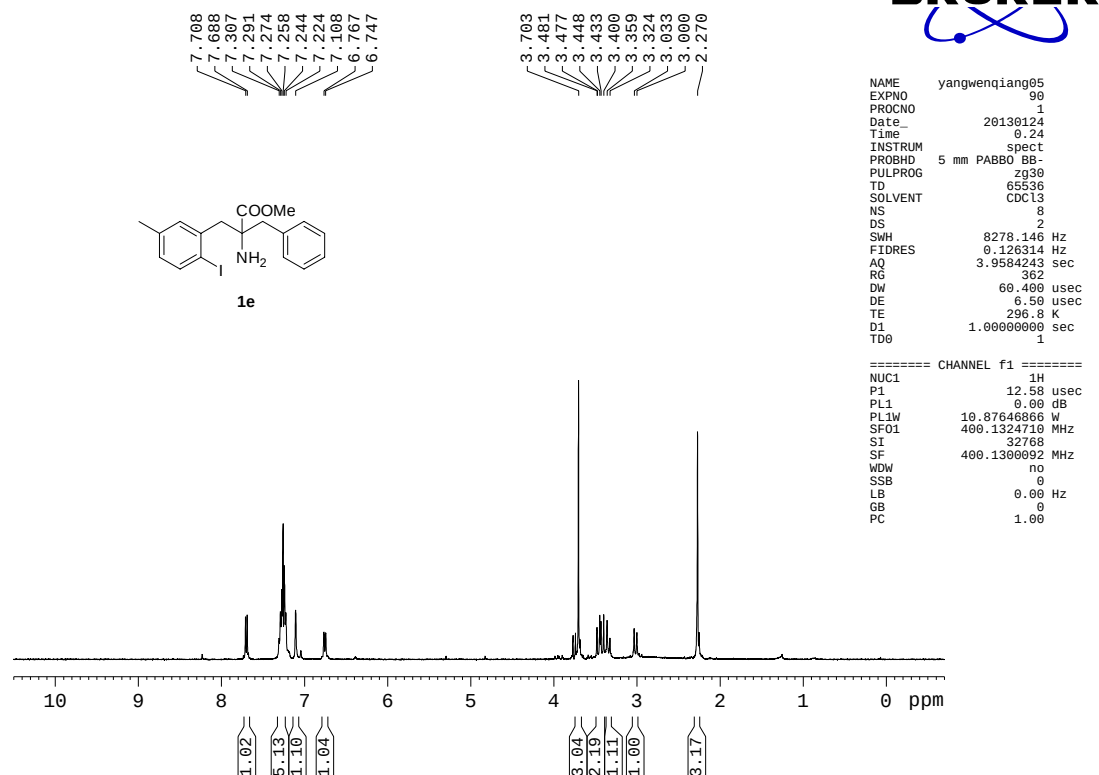
```

===== CHANNEL f1 =====
NUC1      1H
P1        12.58 usec
PL1       0.00 dB
PL1W      10.87646866 W
SF01      400.1324710 MHz
SI         32768
SF        400.1300090 MHz
WDW        EM
SSB         0
LB         0.30 Hz
GB          0
PC          1.00
  
```

10008



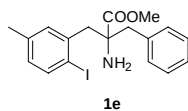
10009



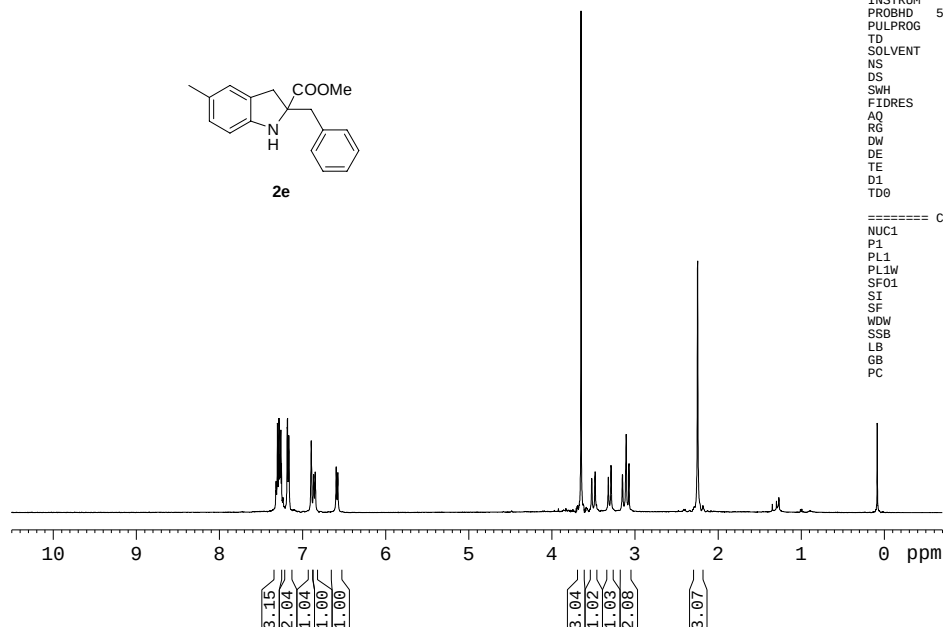
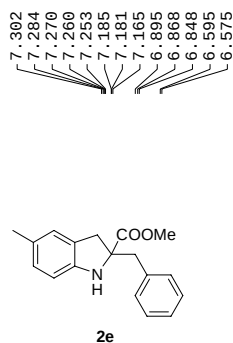
Chemical structure of **1e** is shown above the spectrum.

¹³C NMR spectrum (CDCl₃) peaks (ppm):

- 175.02
- 139.68
- 138.84
- 138.18
- 135.47
- 131.60
- 130.25
- 129.80
- 128.50
- 127.20
- 98.74
- 77.25
- 77.00
- 76.74
- 63.86
- 52.29
- 48.34
- 45.32
- 20.95

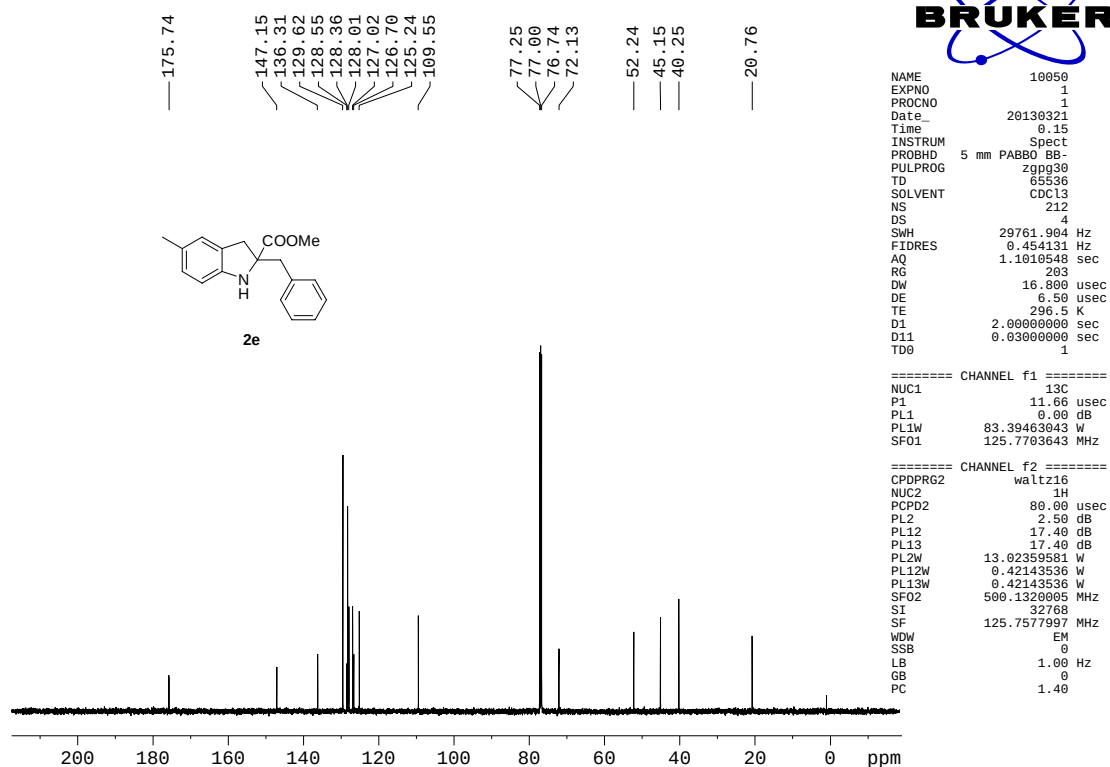


NAME	10099
EXPNO	1
PROCNO	1
Date_	20130226
Time	23.11
INSTRUM	Spect
PROBHD	5 mm PASEI 1H/
PULPROG	zgpg30
TD	65536
SOLVENT	CDCl3
NS	613
DS	4
SWH	29761.904 Hz
FIDRES	0.454131 Hz
AQ	1.1910548 sec
RG	293
DW	16.890 usec
DE	6.50 usec
TE	294.8 K
D1	2.00000000 sec
D11	0.03000000 sec
TD0	1

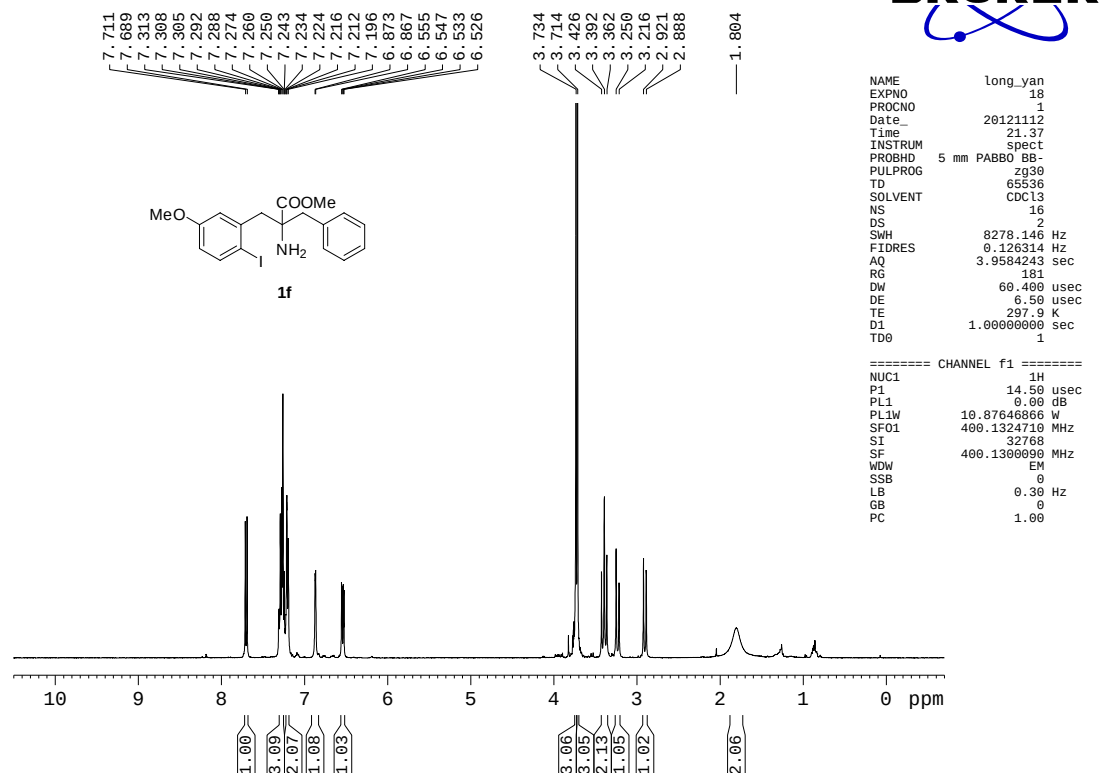


NAME		YWQH
EXPNO		42
PROCNO		1
Date_		20130328
Time		15.15
INSTRUM		spect
PROBHD	5 mm	PABBO BB-
PULPROG		zg30
TD		65536
DS		CDC13
NS		8
DS		2
SWH		8278.146 Hz
FIDRES		0.126314 Hz
AQ		3.9584243 sec
RG		181
DW		60.400 usec
DE		6.50 usec
TE		297.2 K
D1		1.00000000 sec
TD0		1
===== CHANNEL F1 =====		
NUC1		
P1		12.58 usec
PL1		0.00 dB
PL1W		10.87646886 W
SFO1		400.1324710 MHz
NUC2		
P2		32.768 usec
SF		400.1380089 MHz
WDW		EM
SSB		
LB		0.30 Hz
GB		0
PC		1.00

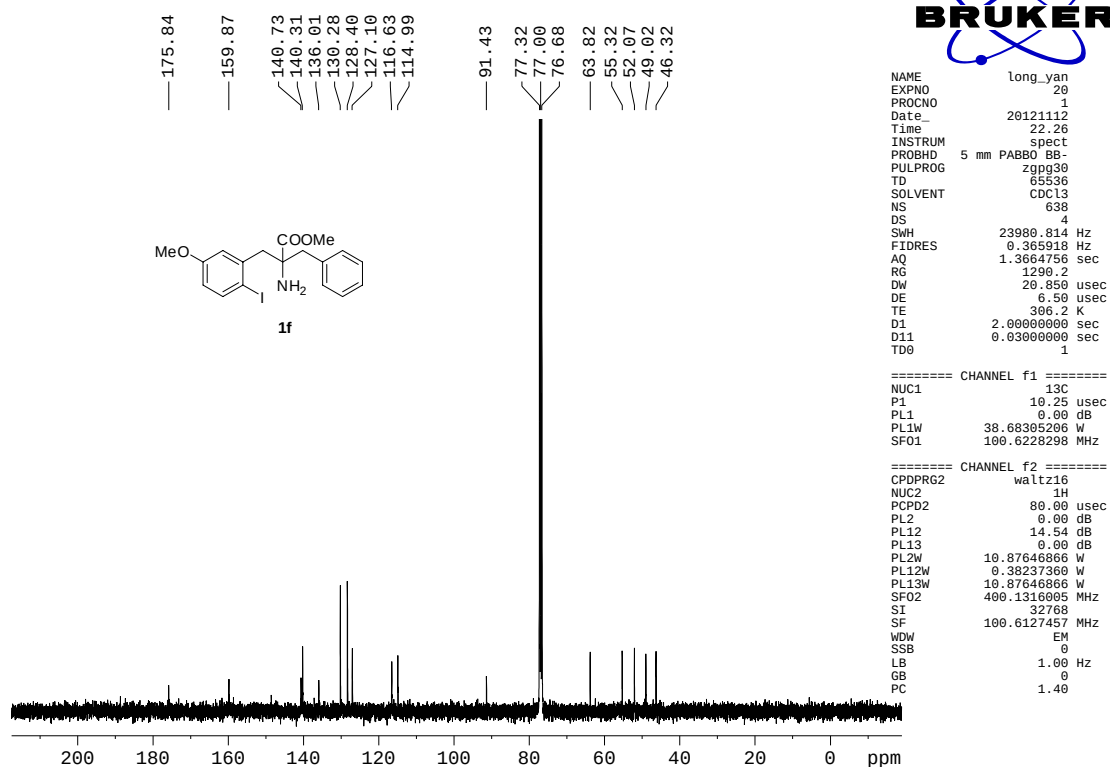
10050



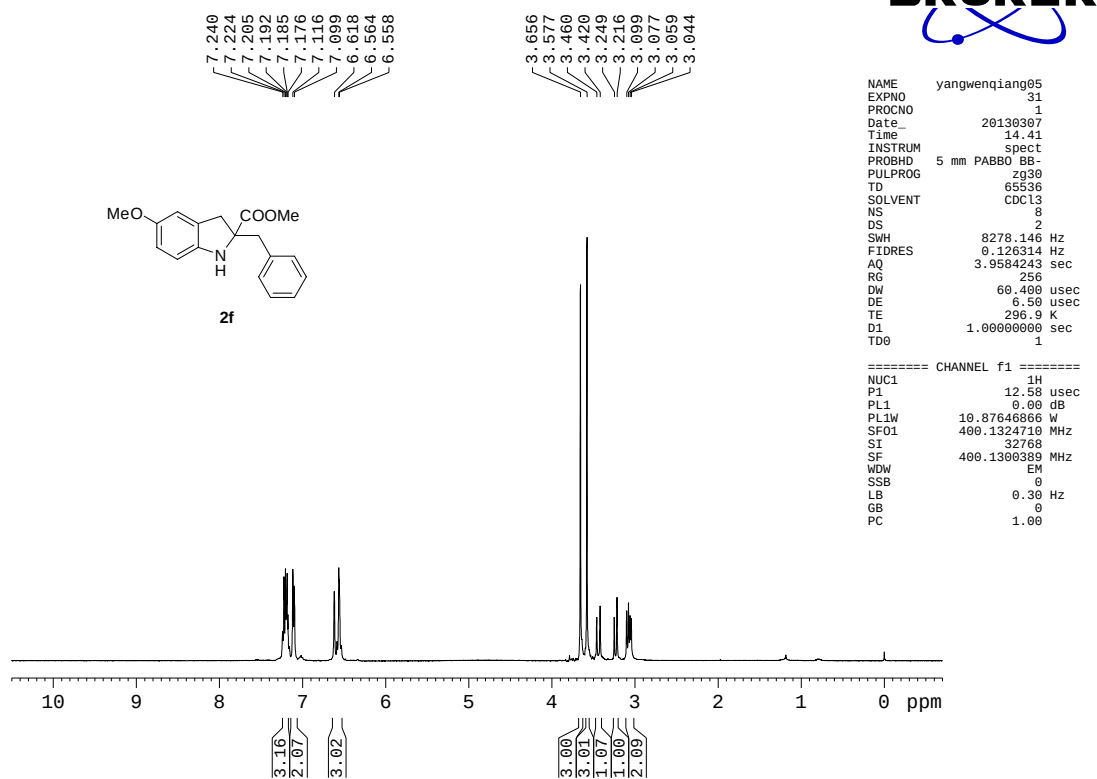
LY-199642



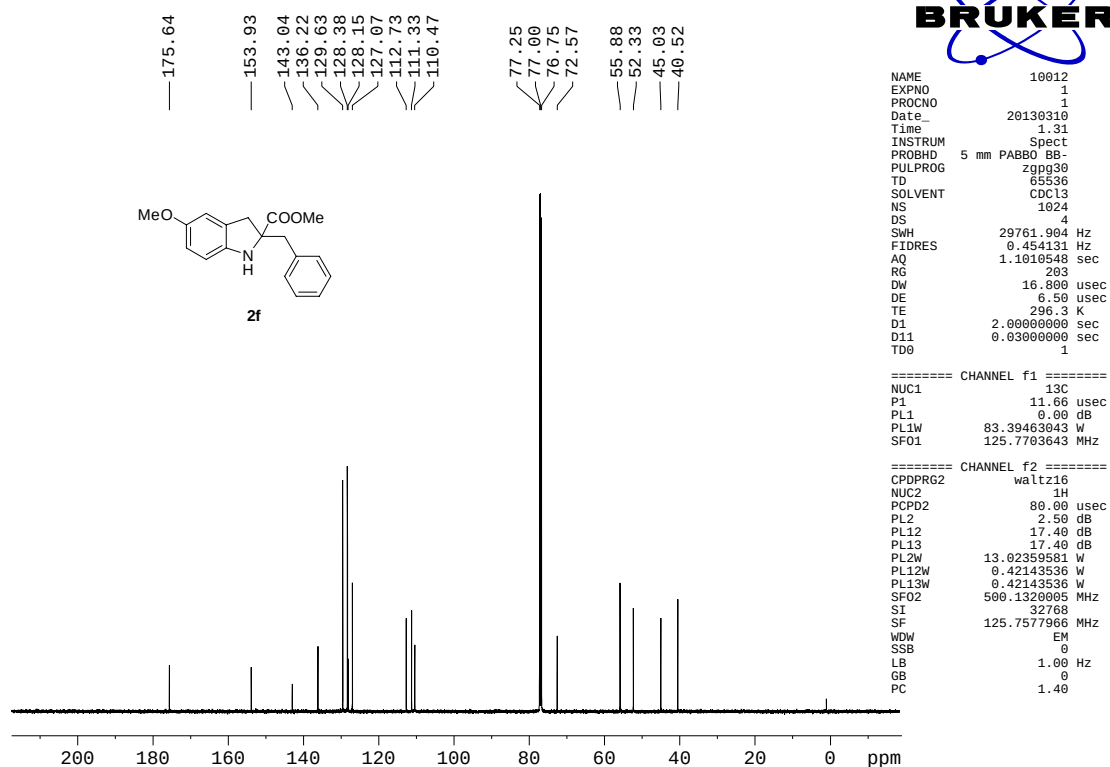
LY-199642



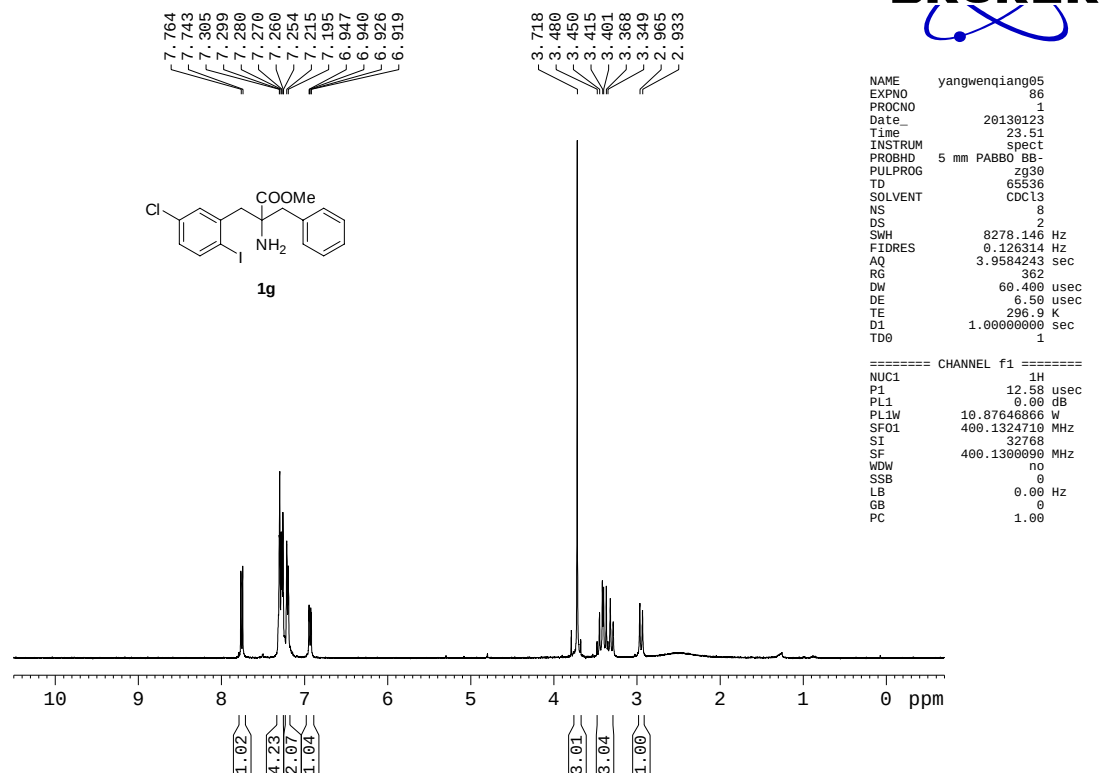
10012



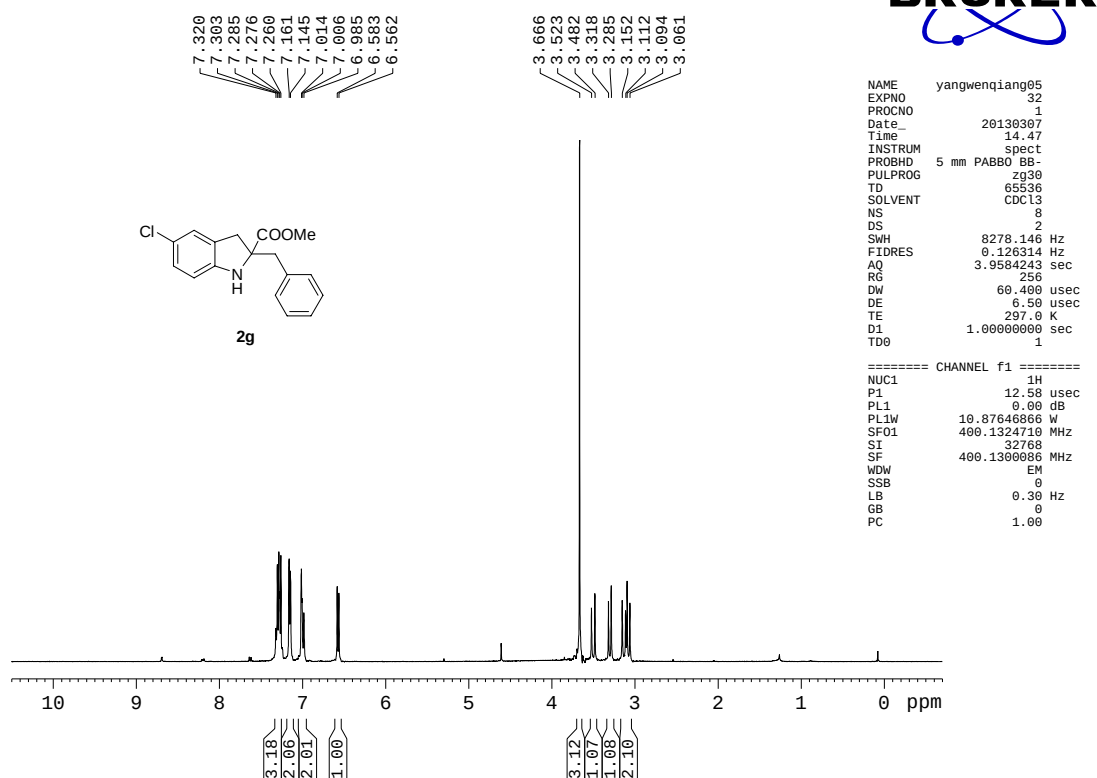
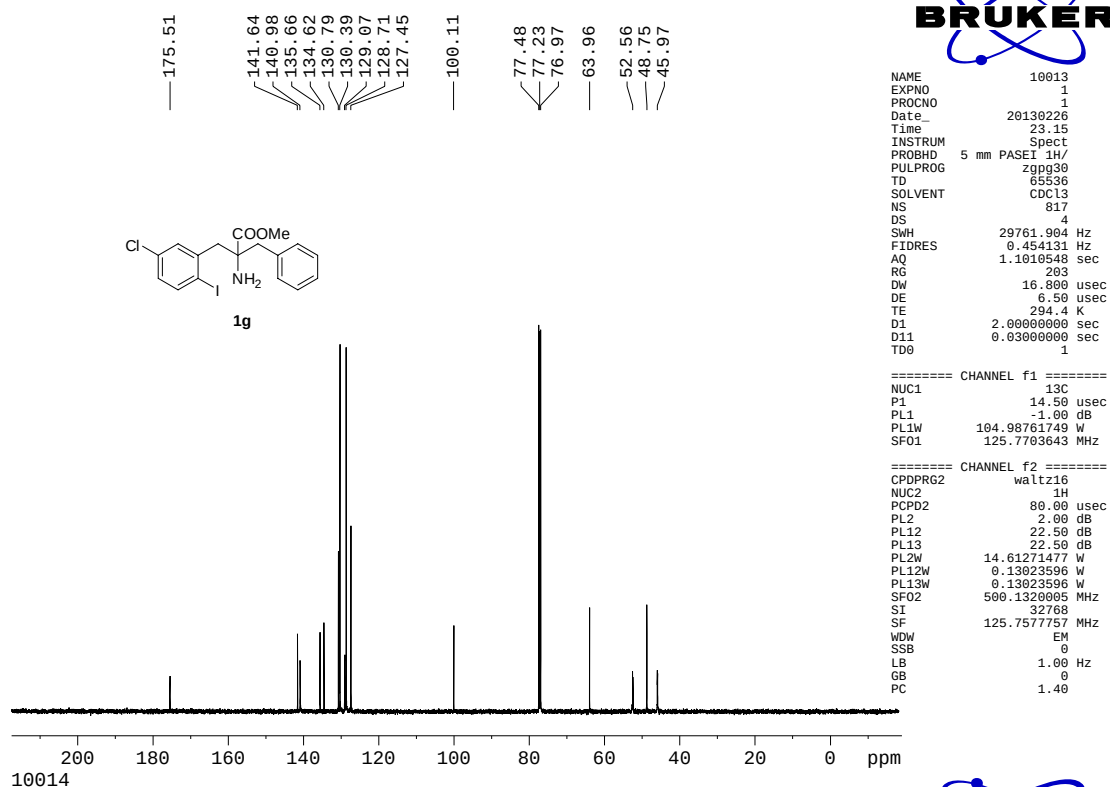
10012



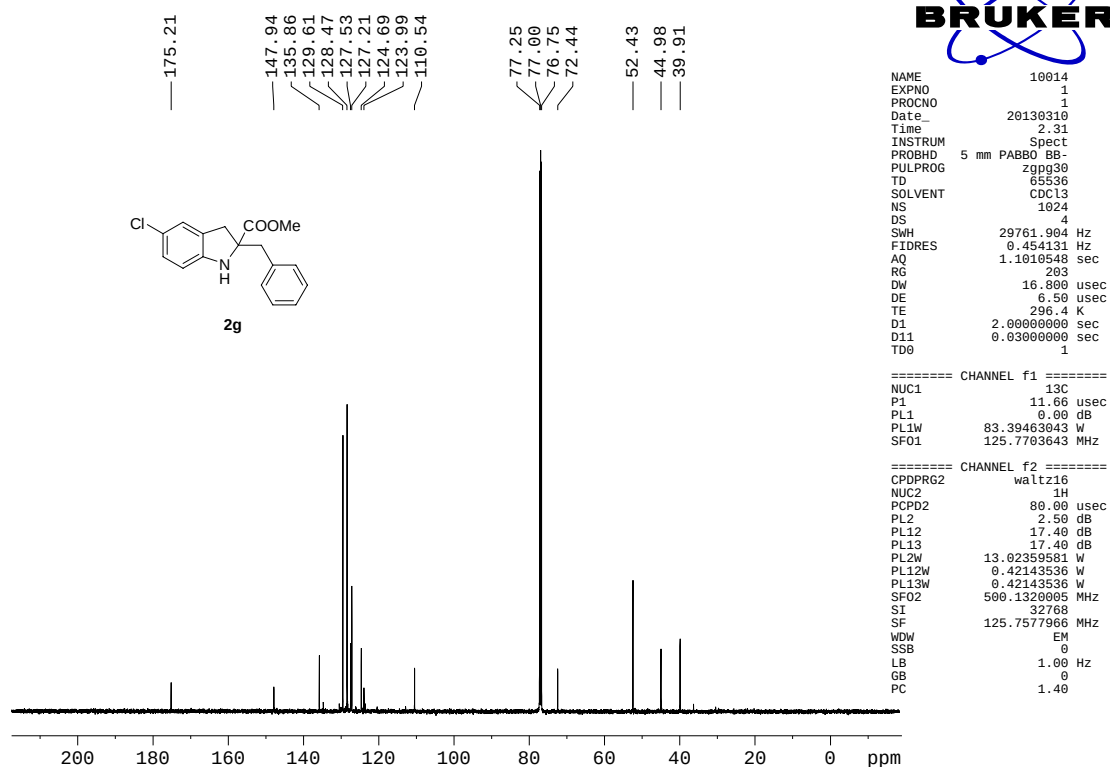
10013



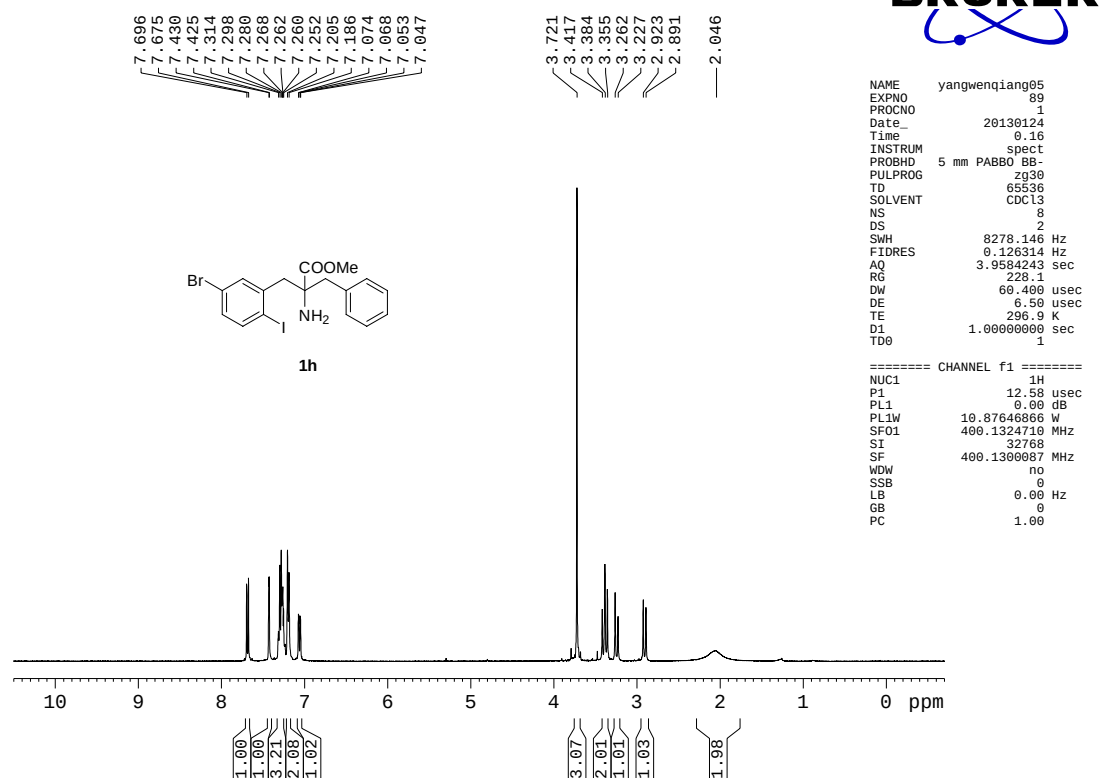
10013



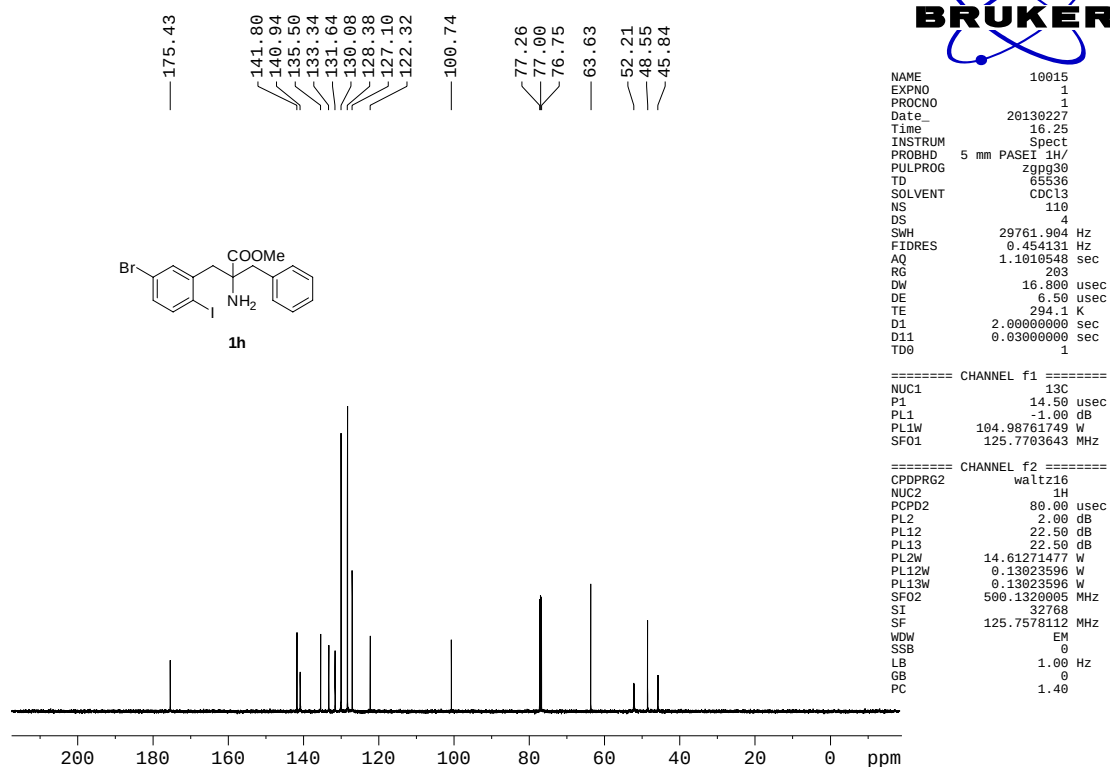
10014



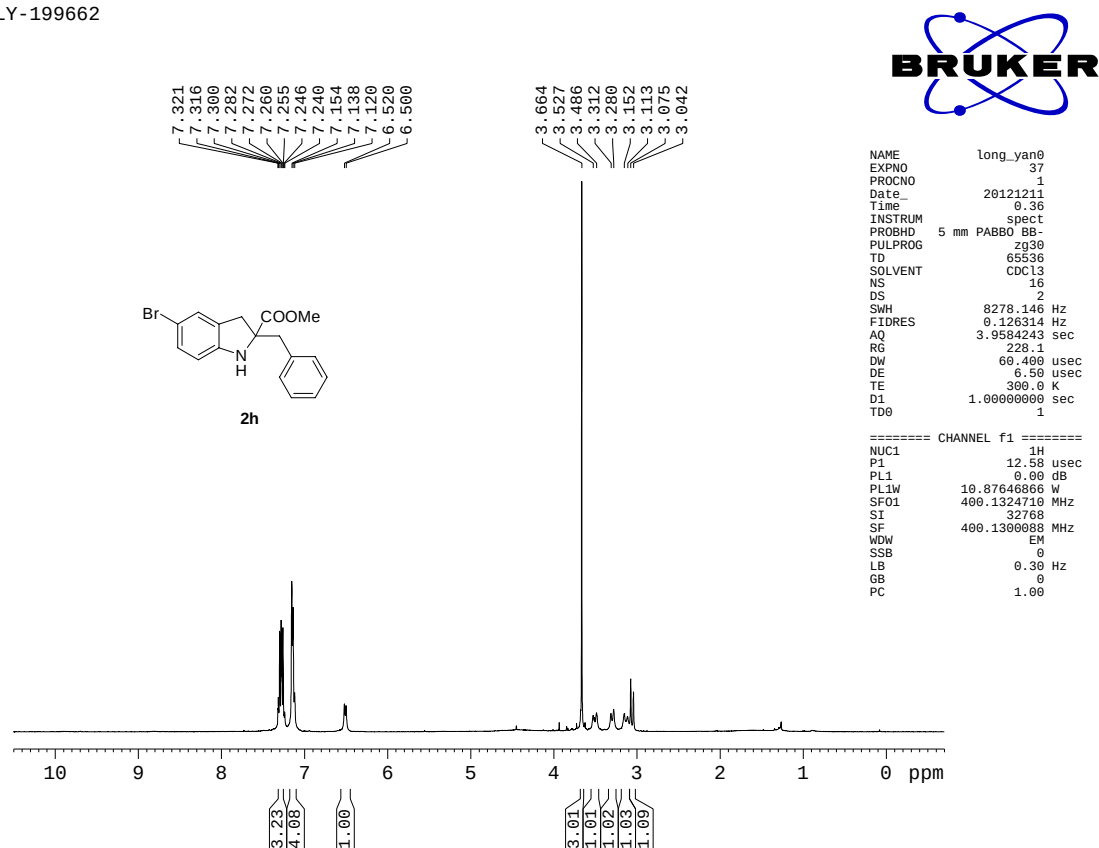
10015



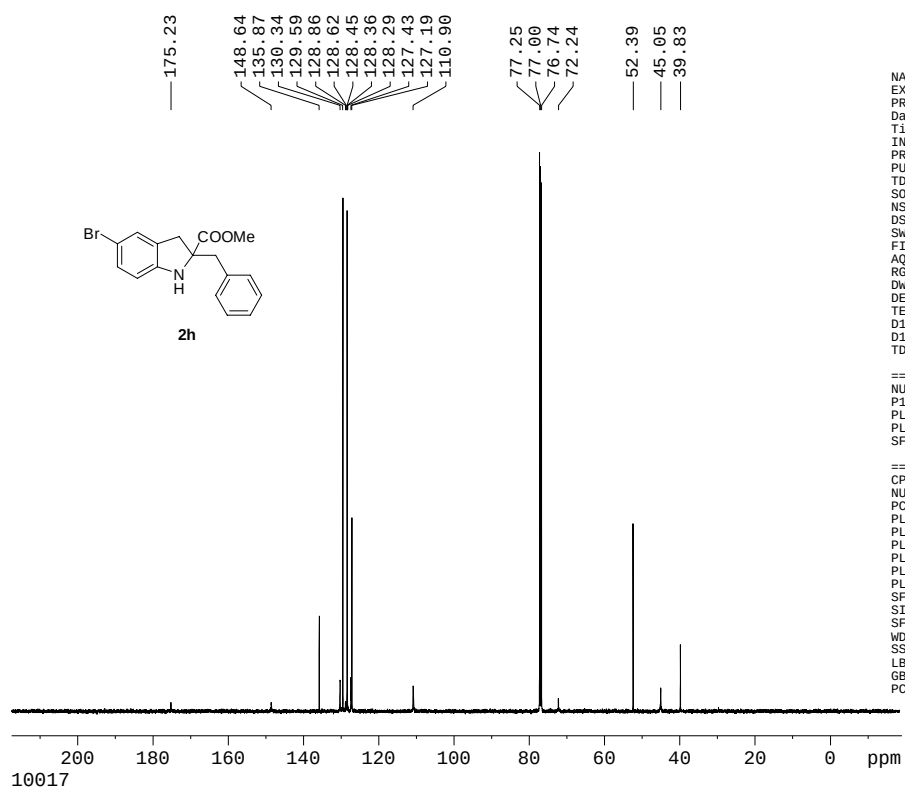
10015



LY-199662



LY-199662-C

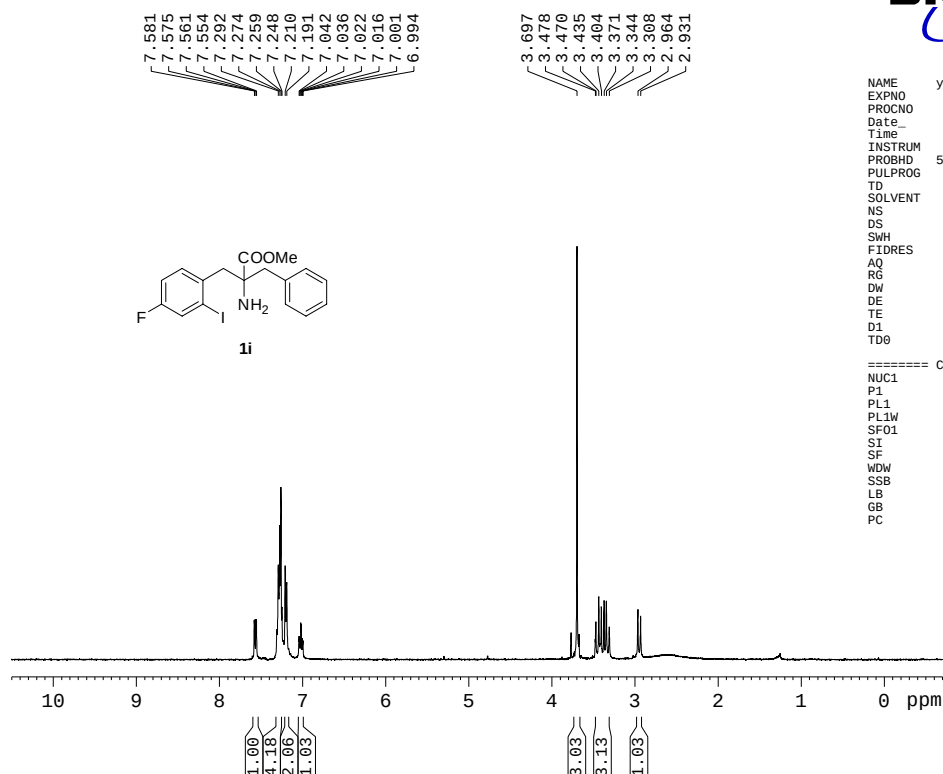


```

NAME      ly199662-C
EXPNO     1
PROCNO    1
Date_     20121210
Time      18.15
INSTRUM   spect
PROBHD    5 mm PABBO BB-
PULPROG   zgpg30
TD         65536
SOLVENT   CDCl3
NS         1024
DS         4
SWH        29761.904 Hz
FIDRES     0.454131 Hz
AQ         1.1010548 sec
RG         203
DW         16.800 usec
DE         6.50 usec
TE         300.6 K
D1         2.00000000 sec
D11        0.03000000 sec
TD0        1

===== CHANNEL f1 =====
NUC1       13C
P1         11.66 usec
PL1        0.00 dB
PL1W       83.39463043 W
SF01       125.7703643 MHz

===== CHANNEL f2 =====
CPDPRG2    waltz16
NUC2       1H
PCPD2      80.00 usec
PL2        2.50 dB
PL12       17.40 dB
PL13       17.40 dB
PL2W       13.02359581 W
PL12W      0.42143536 W
PL13W      0.42143536 W
SF02       500.1320005 MHz
SI         32768
SF         125.7577984 MHz
WDW        EM
SSB        0
LB         1.00 Hz
GB         0
PC         1.40
  
```

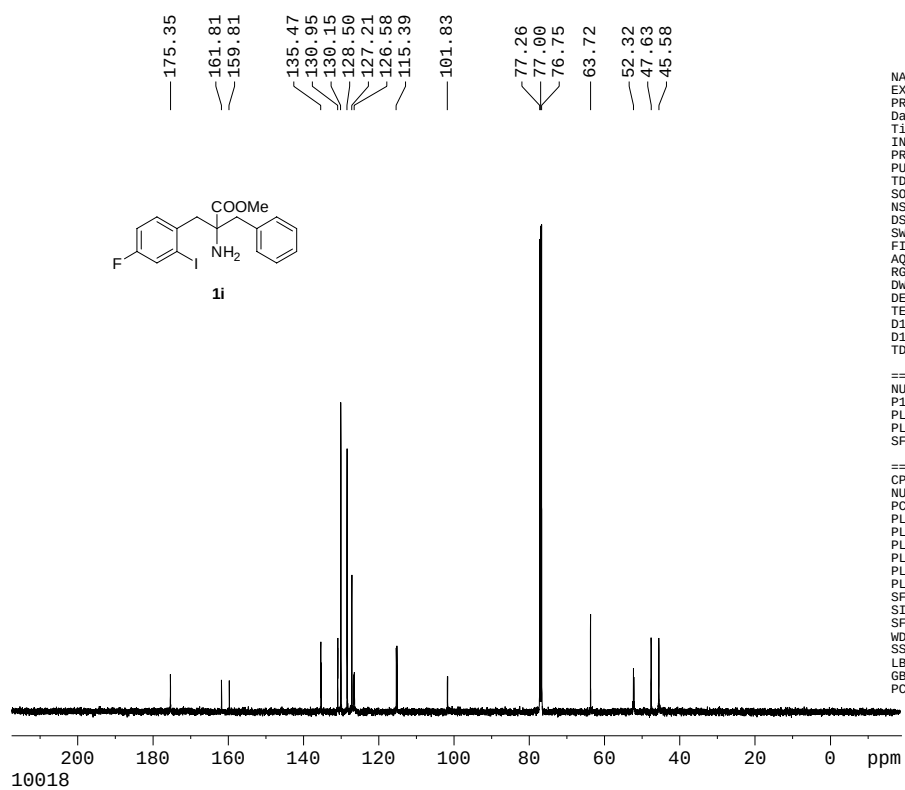


```

NAME      yangwenqiang05
EXPNO     87
PROCNO    1
Date_     20130123
Time      23.59
INSTRUM   spect
PROBHD    5 mm PABBO BB-
PULPROG   zg30
TD         65536
SOLVENT   CDCl3
NS         8
DS         2
SWH        8278.146 Hz
FIDRES     0.126314 Hz
AQ         3.9584243 sec
RG         362
DW         60.400 usec
DE         0.50 usec
TE         296.8 K
D1         1.00000000 sec
TD0        1

===== CHANNEL f1 =====
NUC1       1H
P1         12.58 usec
PL1        0.00 dB
PL1W       10.87646866 W
SF01       400.1324710 MHz
SI         32768
SF         400.1300092 MHz
WDW        no
SSB        0
LB         0.00 Hz
GB         0
PC         1.00
  
```

10017



```

NAME      10017
EXPNO     1
PROCNO    1
Date_     20130227
Time      16.32
INSTRUM   spect
PROBHD    5 mm PASEI 1H/
PULPROG   zgpg30
TD         65536
SOLVENT   CDCl3
NS         1024
DS         4
SWH        29761.904 Hz
FIDRES     0.454131 Hz
AQ         1.1010548 sec
RG         203
DW         16.800 usec
DE         6.50 usec
TE         293.8 K
D1         2.00000000 sec
D11        0.03000000 sec
TD0        1

```

```

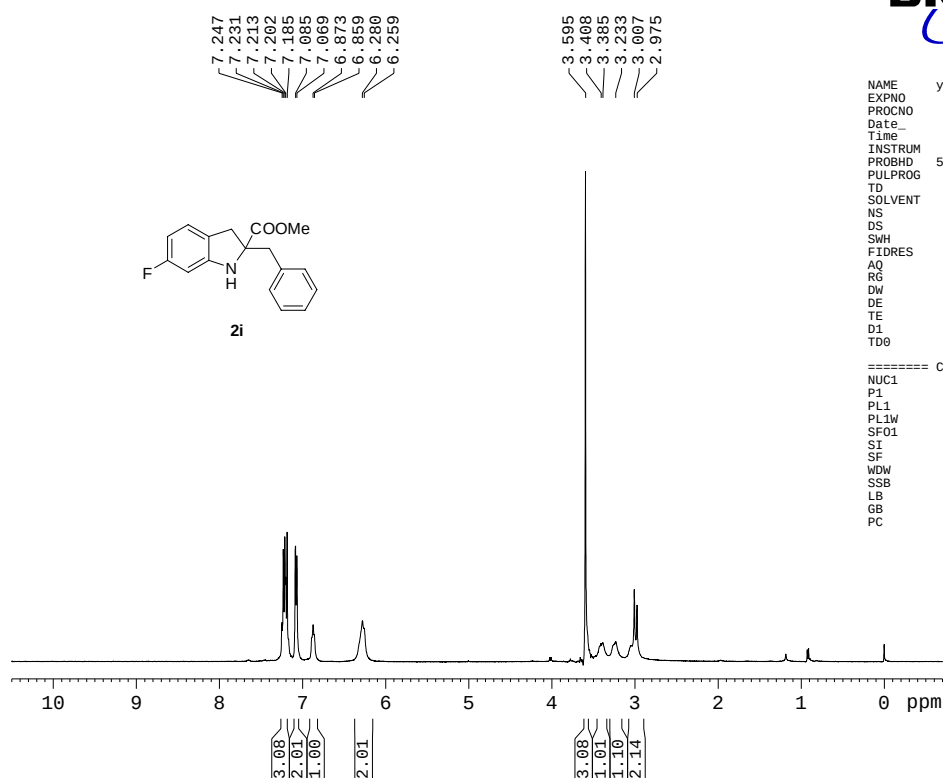
===== CHANNEL f1 =====
NUC1      13C
P1        14.50 usec
PL1       -1.00 dB
PL1W      104.98761749 W
SF01      125.7703643 MHz

```

```

===== CHANNEL f2 =====
CPDPRG2   waltz16
NUC2       1H
PCPD2     80.00 usec
PL2        2.00 dB
PL12       22.50 dB
PL13       22.50 dB
PL2W       14.61271477 W
PL12W      0.13023596 W
PL13W      0.13023596 W
SF02       500.1320005 MHz
SI         32768
SF         125.7578133 MHz
WDW        EM
SSB        0
LB         1.00 Hz
GB         0
PC         1.40

```



```

NAME      yangwenqiang05
EXPNO     33
PROCNO    1
Date_     20130307
Time      14.54
INSTRUM   spect
PROBHD    5 mm PABBO BB-
PULPROG   zg30
TD         65536
SOLVENT   CDCl3
NS         8
DS         2
SWH        8278.146 Hz
FIDRES     0.126314 Hz
AQ         3.9584243 sec
RG         256
DW         60.400 usec
DE         6.50 usec
TE         297.0 K
D1         1.00000000 sec
TD0        1

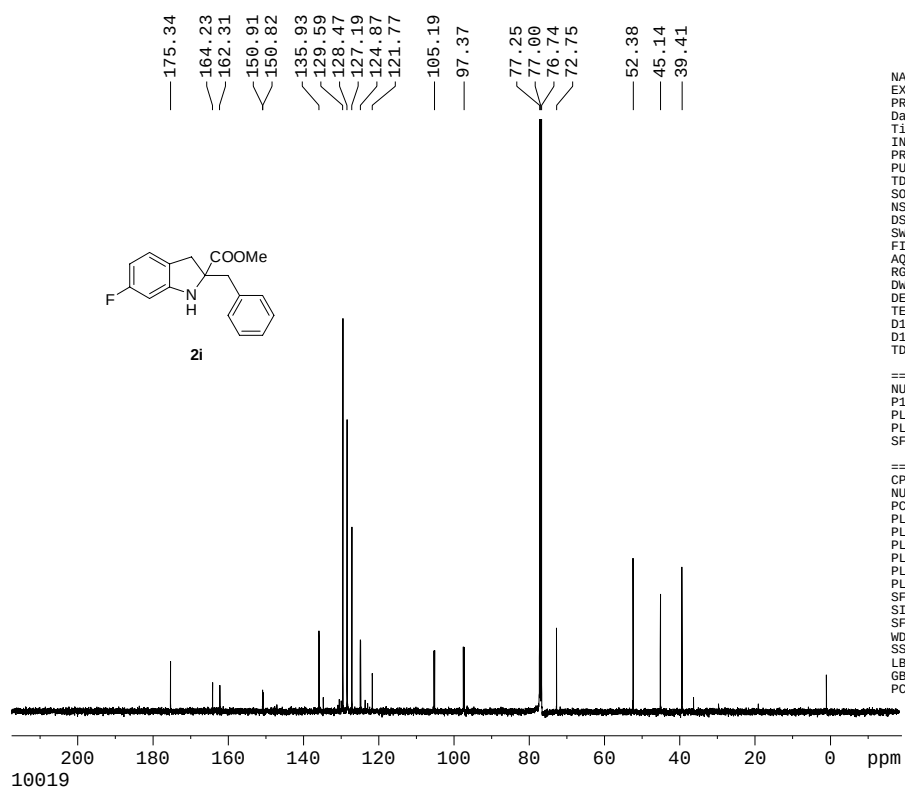
```

```

===== CHANNEL f1 =====
NUC1      1H
P1        12.58 usec
PL1        0.00 dB
PL1W      10.87646866 W
SF01      400.1324710 MHz
SI         32768
SF         400.1300389 MHz
WDW        EM
SSB        0
LB         0.30 Hz
GB         0
PC         1.00

```


10018



```

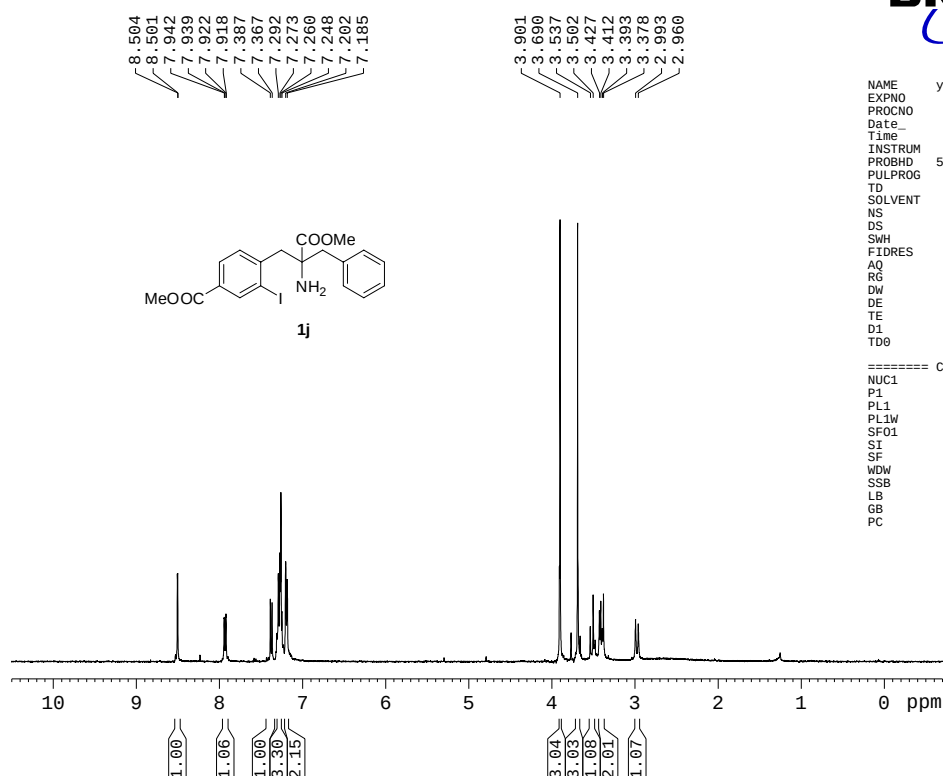
NAME      10018
EXPNO     1
PROCNO    1
Date_     20130310
Time      3.38
INSTRUM   Spect
PROBHD    5 mm PABBO BB-
PULPROG   zgpg30
TD         65536
SOLVENT   CDCl3
NS         1024
DS         4
SWH        29761.904 Hz
FIDRES     0.454131 Hz
AQ         1.1010548 sec
RG         203
DW         16.800 usec
DE         6.50 usec
TE         296.5 K
D1         2.00000000 sec
D11        0.03000000 sec
TD0        1
  
```

```

===== CHANNEL f1 =====
NUC1      13C
P1        11.66 usec
PL1       0.00 dB
PL1W      83.39463043 W
SF01      125.7703643 MHz
  
```

```

===== CHANNEL f2 =====
CPDPRG2   waltz16
NUC2       1H
PCPD2     80.00 usec
PL2       2.50 dB
PL12      17.40 dB
PL13      17.40 dB
PL13W     13.02359581 W
PL12W     0.42143536 W
PL13W     0.42143536 W
SF02      500.1320005 MHz
SI         32768
SF        125.7577966 MHz
WDW        EM
SSB        0
LB         1.00 Hz
GB         0
PC         1.40
  
```



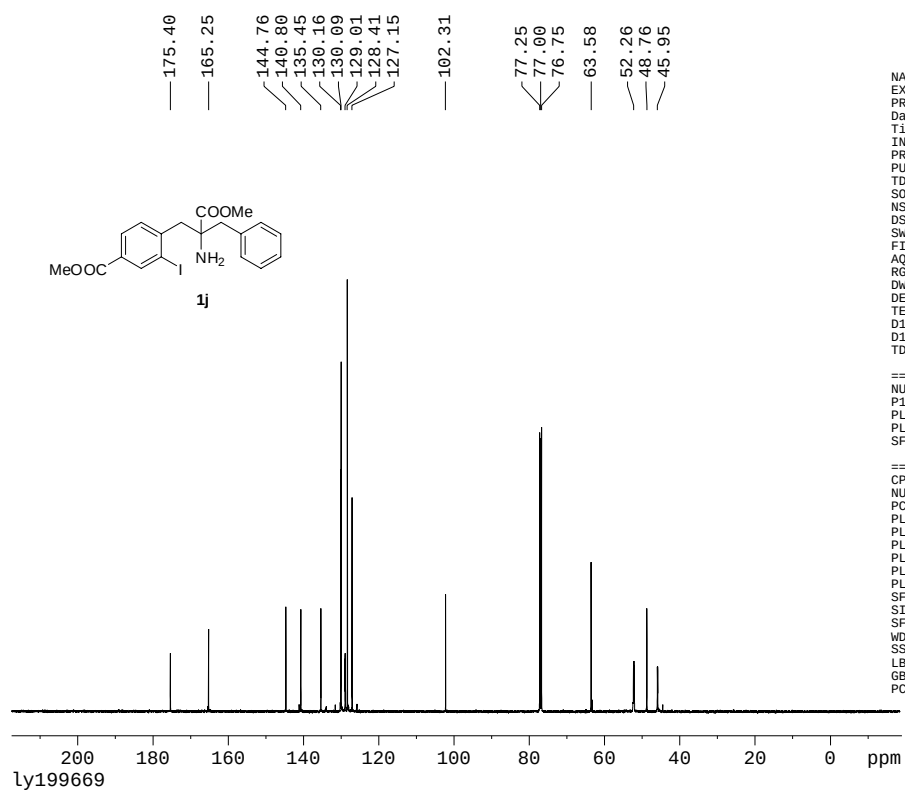
```

NAME      yangwenqiang05
EXPNO     84
PROCNO    1
Date_     20130123
Time      23.36
INSTRUM   spect
PROBHD    5 mm PABBO BB-
PULPROG   zg30
TD         65536
SOLVENT   CDCl3
NS         8
DS         2
SWH        8278.146 Hz
FIDRES     0.126314 Hz
AQ         3.9584243 sec
RG         322.5
DW         60.400 usec
DE         6.50 usec
TE         297.0 K
D1         1.00000000 sec
D10        1
  
```

```

===== CHANNEL f1 =====
NUC1      1H
P1        12.58 usec
PL1       0.00 dB
PL1W      10.87646866 W
SF01      400.1324710 MHz
SI         32768
SF        400.1300092 MHz
WDW        no
SSB        0
LB         0.00 Hz
GB         0
PC         1.00
  
```

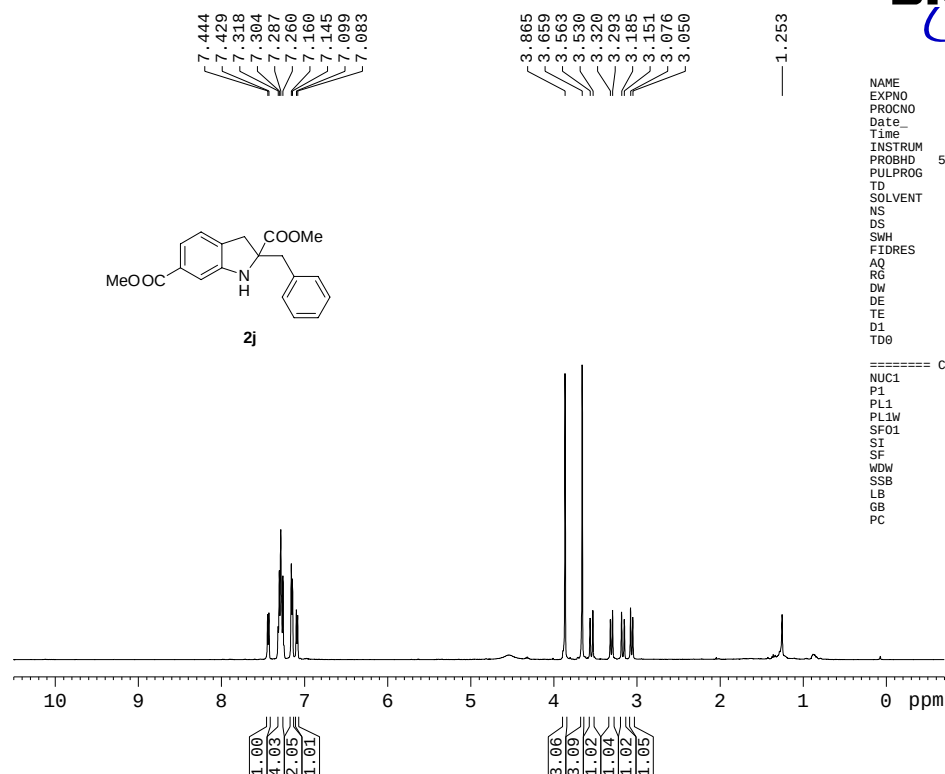
10019



NAME 10019
EXPNO 1
PROCNO 1
Date_ 20130227
Time 13.56
INSTRUM Spect
PROBHD 5 mm PASEI 1H/
PULPROG zgpg30
TD 65536
SOLVENT CDCl3
NS 1024
DS 4
SWH 29761.904 Hz
FIDRES 0.454131 Hz
AQ 1.1010548 sec
RG 203
DW 16.800 usec
DE 6.50 usec
TE 294.6 K
D1 2.0000000 sec
D11 0.0300000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 13C
P1 14.50 usec
PL1 -1.00 dB
PL1W 104.98761749 W
SF01 125.7703643 MHz

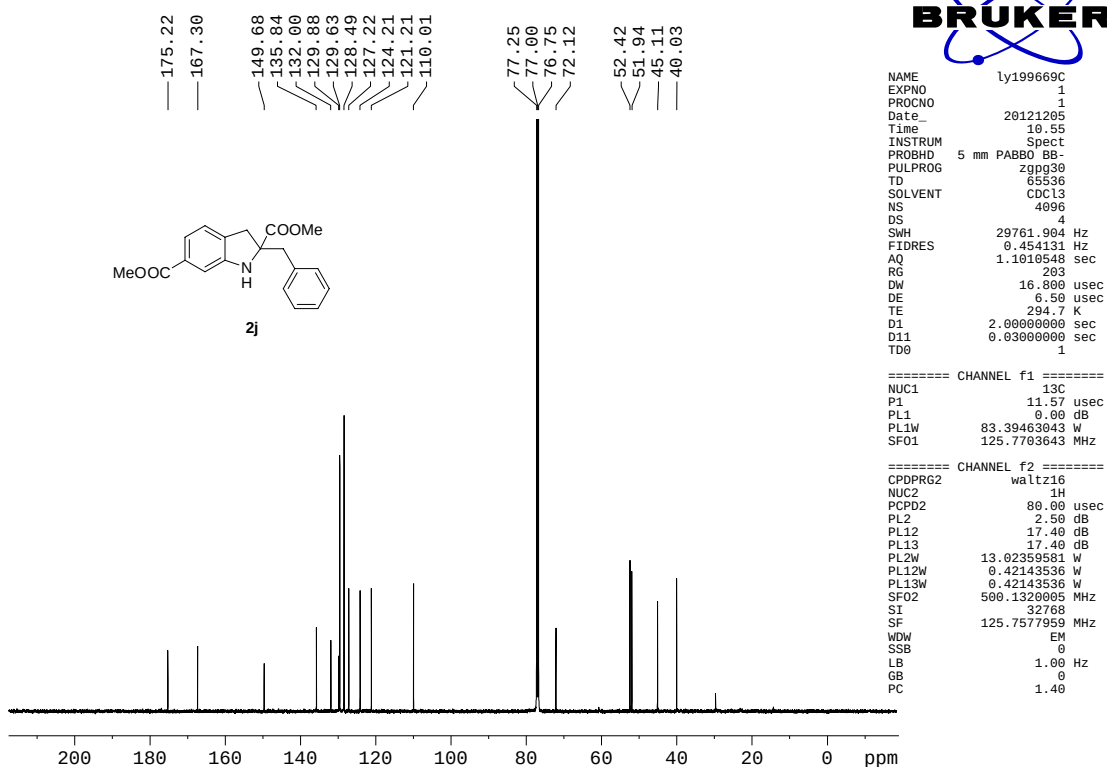
===== CHANNEL f2 =====
CPDPRG2 waltz16
NUC2 1H
PCPD2 80.00 usec
PL2 2.00 dB
PL12 22.50 dB
PL13 22.50 dB
PL2W 14.61271477 W
PL12W 0.13023596 W
PL13W 0.13023596 W
SF02 500.1320005 MHz
SI 32768
SF 125.7578063 MHz
WDW EM
SSB 0
LB 1.00 Hz
GB 0
PC 1.40



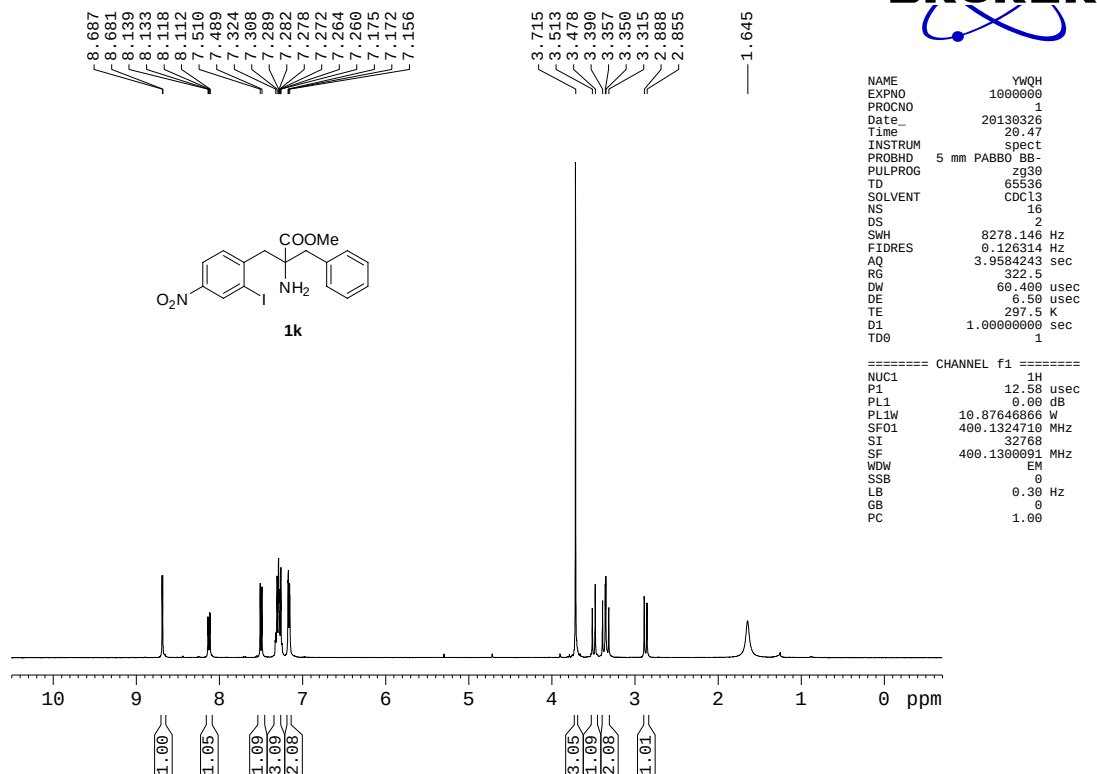
NAME ly199669
EXPNO 1
PROCNO 1
Date_ 20121205
Time 16.15
INSTRUM Spect
PROBHD 5 mm PABBO BB-
PULPROG zg30
TD 65536
SOLVENT CDCl3
NS 16
DS 2
SWH 10330.570 Hz
FIDRES 0.157632 Hz
AQ 3.1719923 sec
RG 161
DW 48.400 usec
DE 0.50 usec
TE 291.9 K
D1 1.0000000 sec
TD0 1

===== CHANNEL f1 =====
NUC1 1H
P1 14.00 usec
PL1 2.50 dB
PL1W 13.02359581 W
SF01 500.1330005 MHz
SI 32768
SF 500.1300227 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

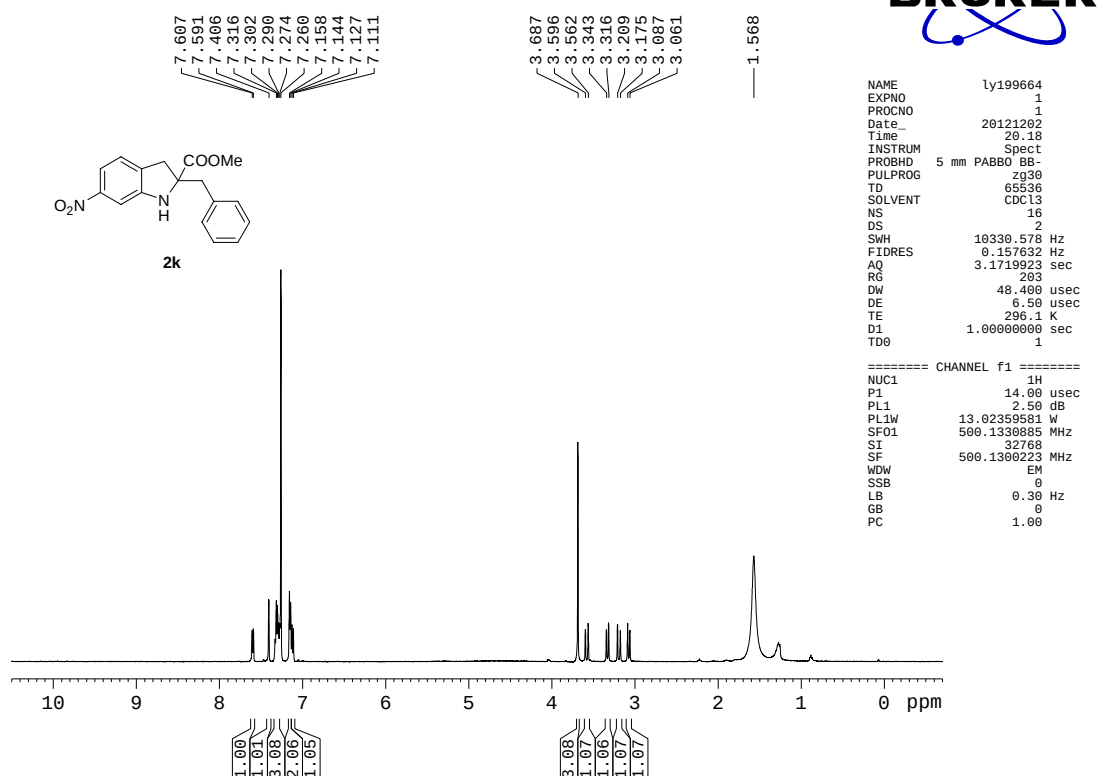
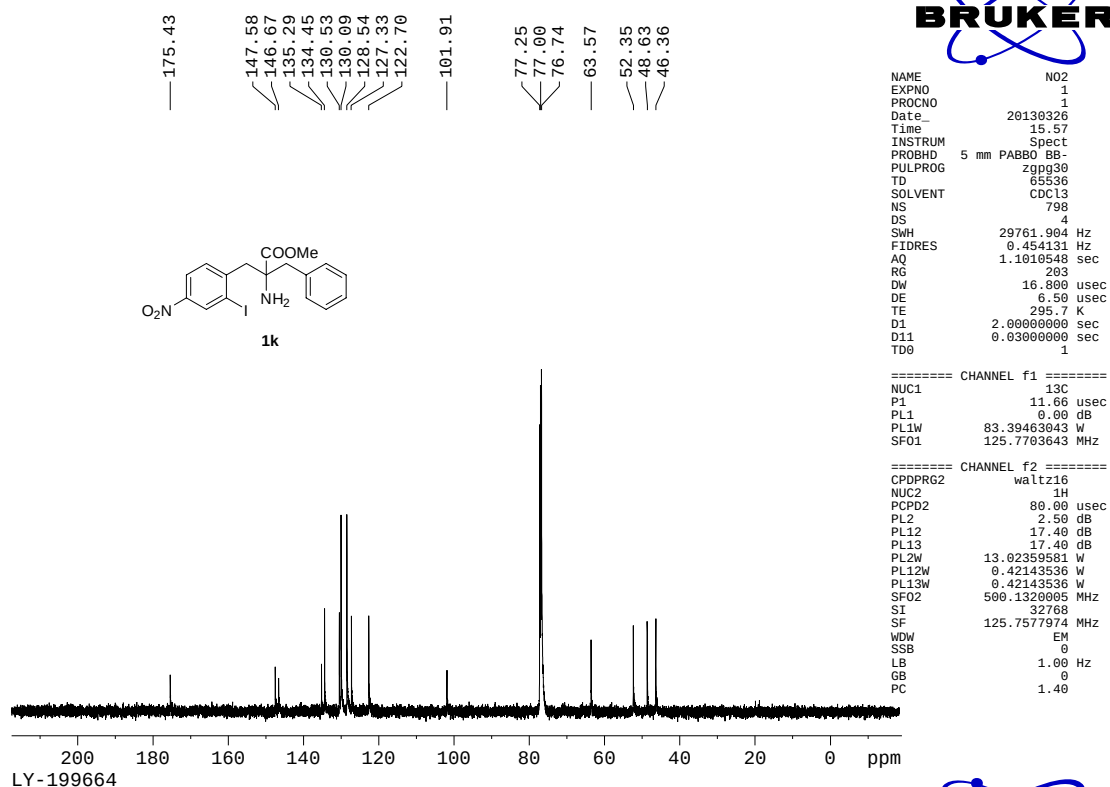
ly199669C



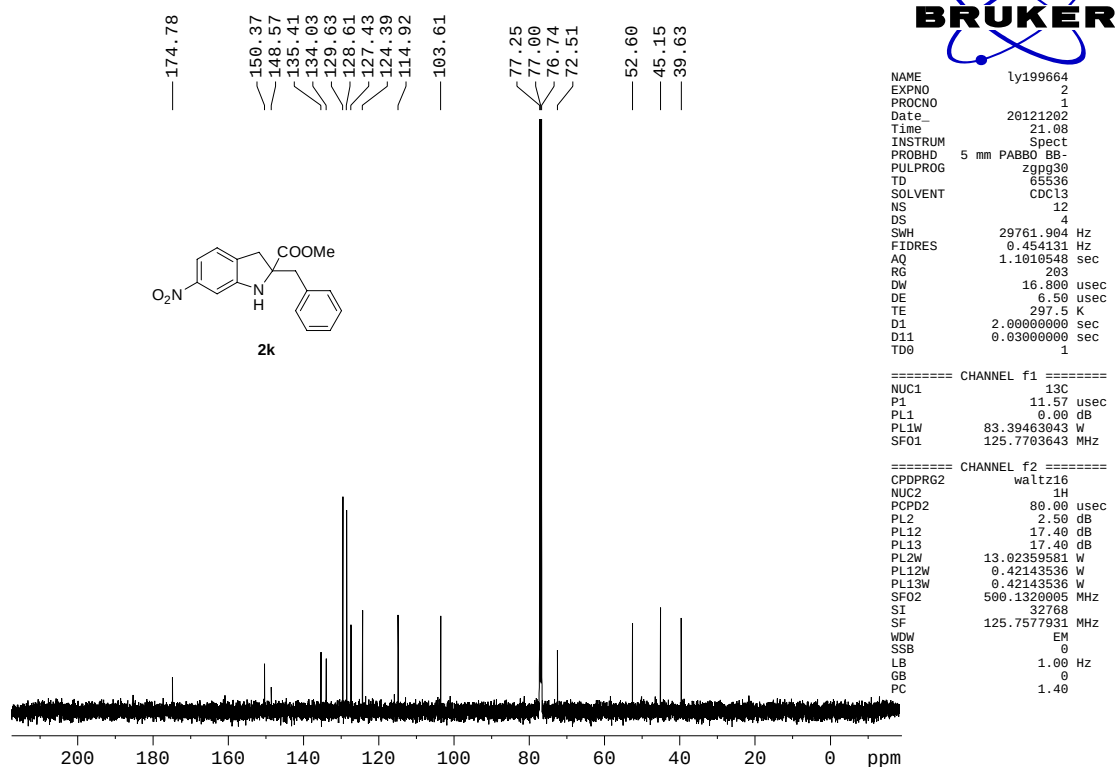
10000000



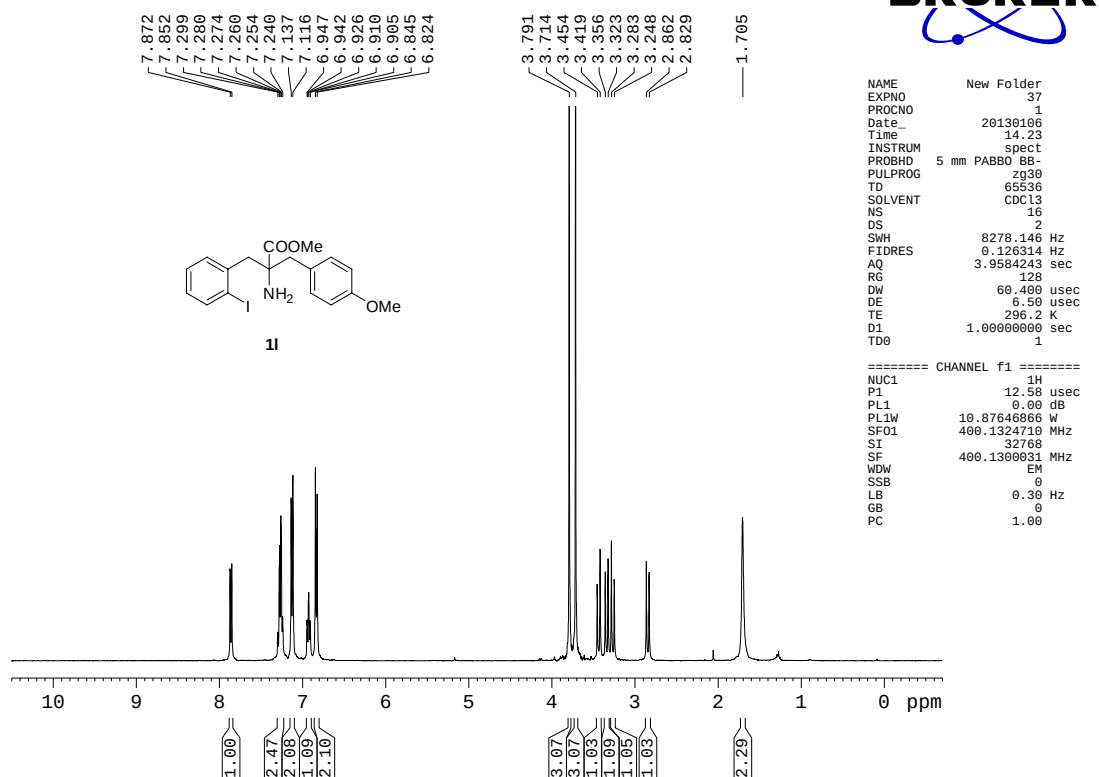
NO2



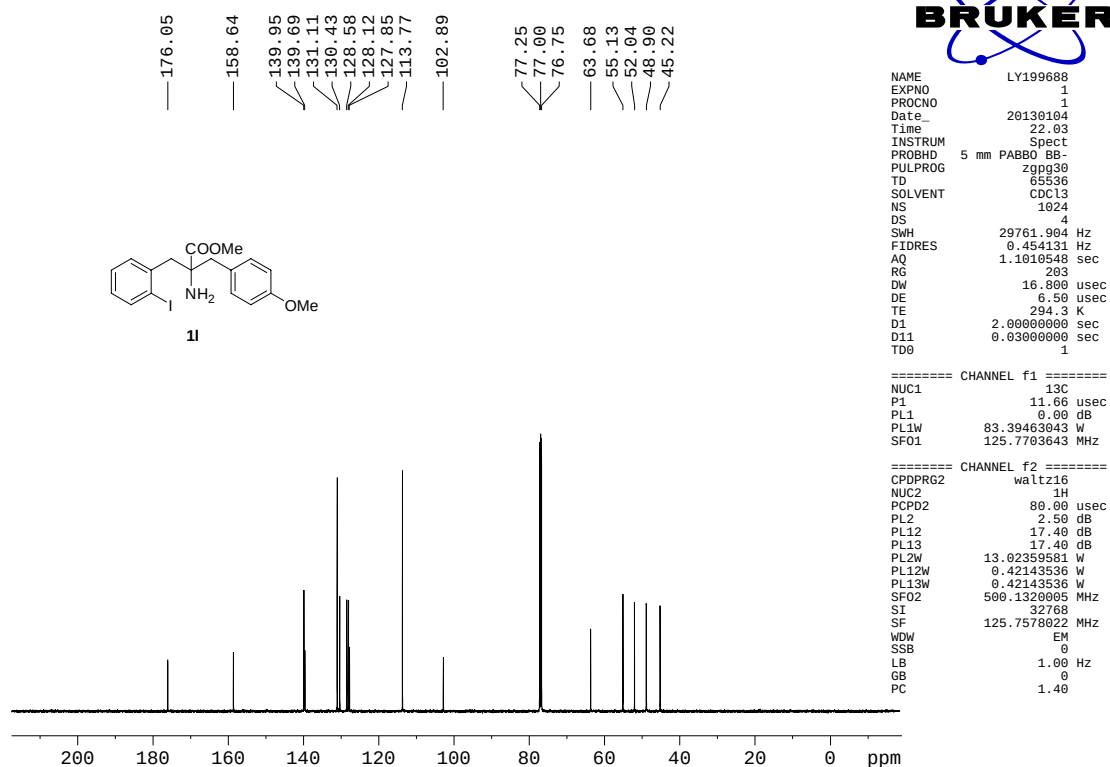
LY-199664



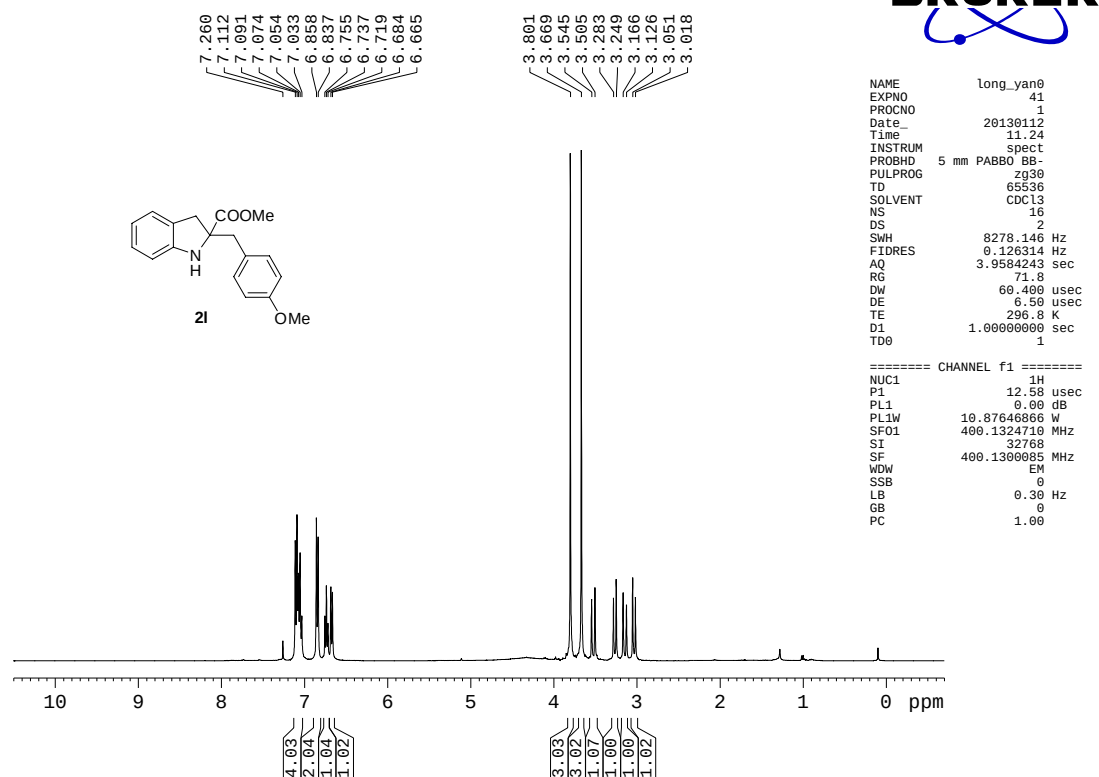
LY-199688



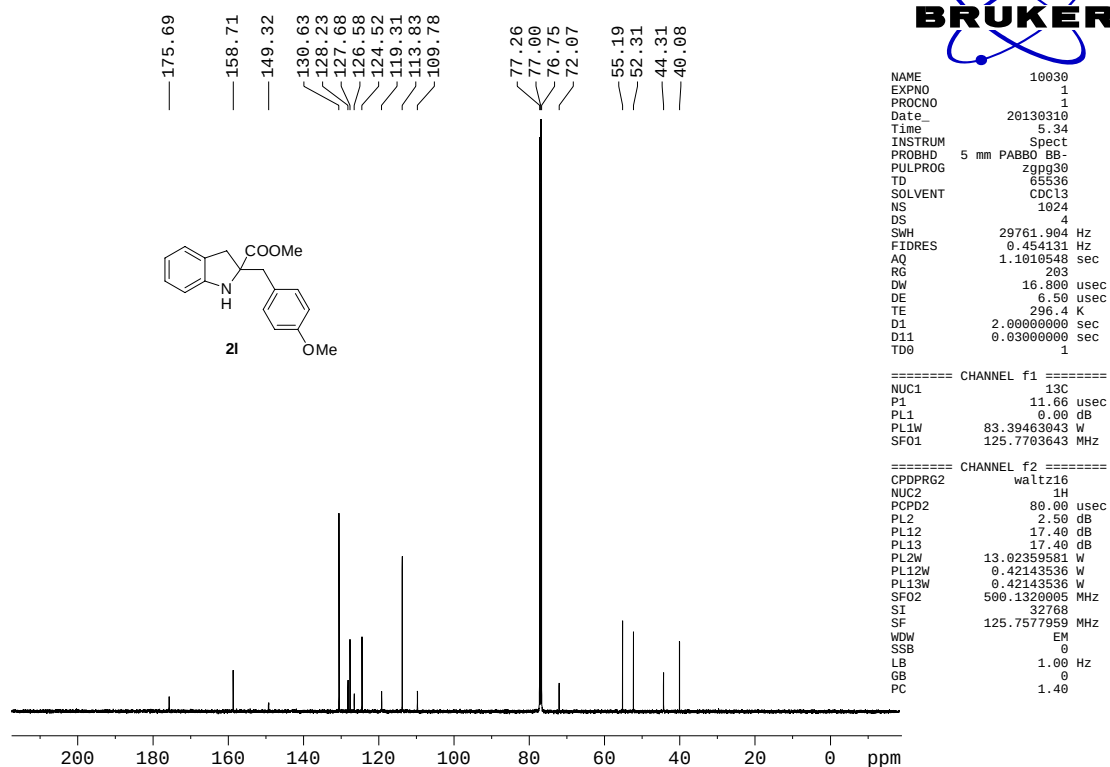
199688



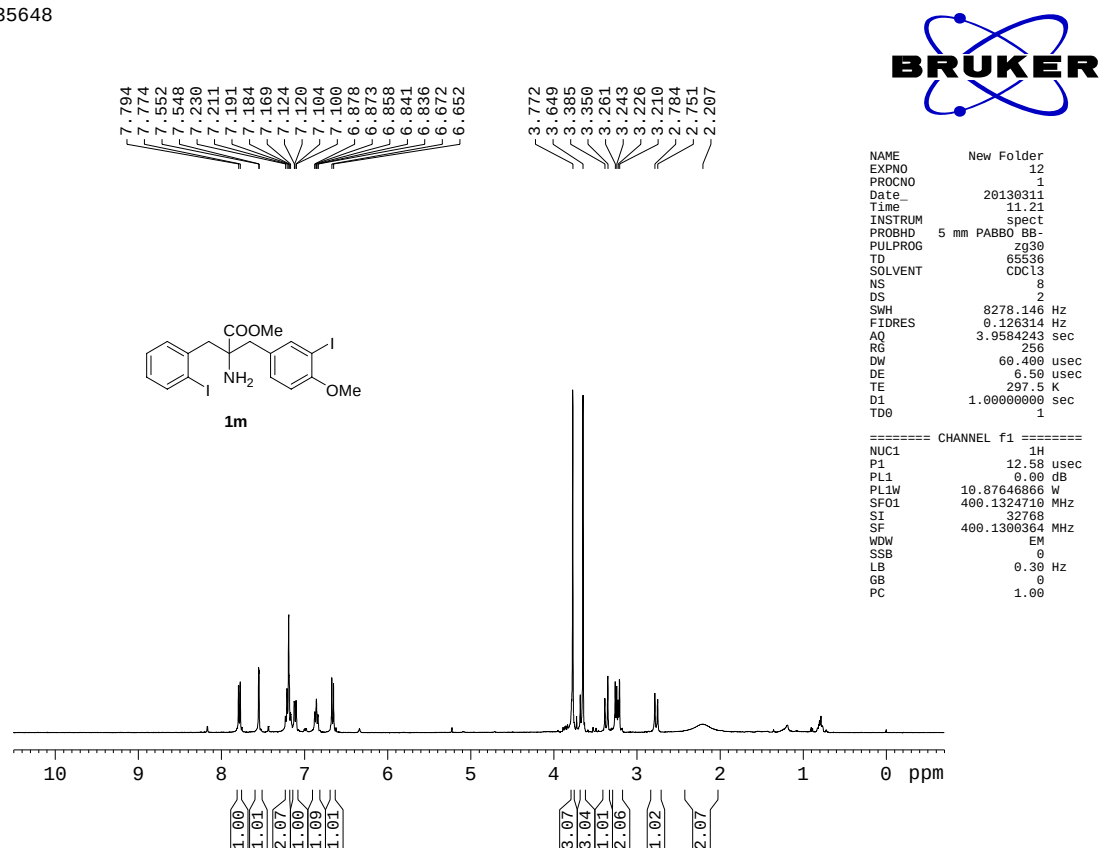
LY-199694



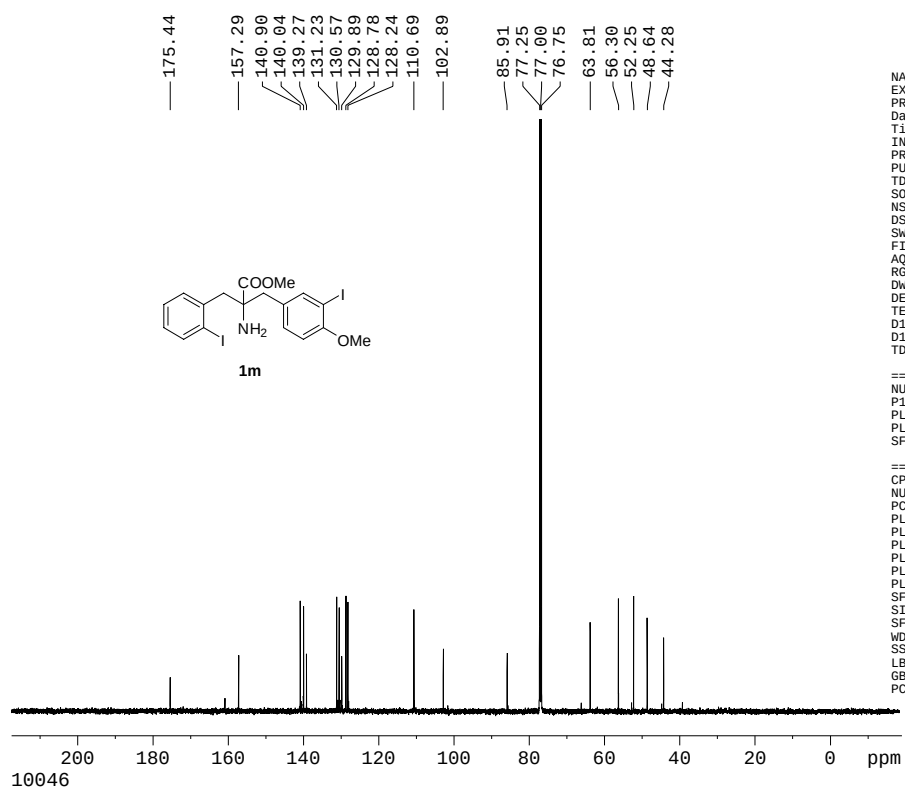
10030



35648



35648



```

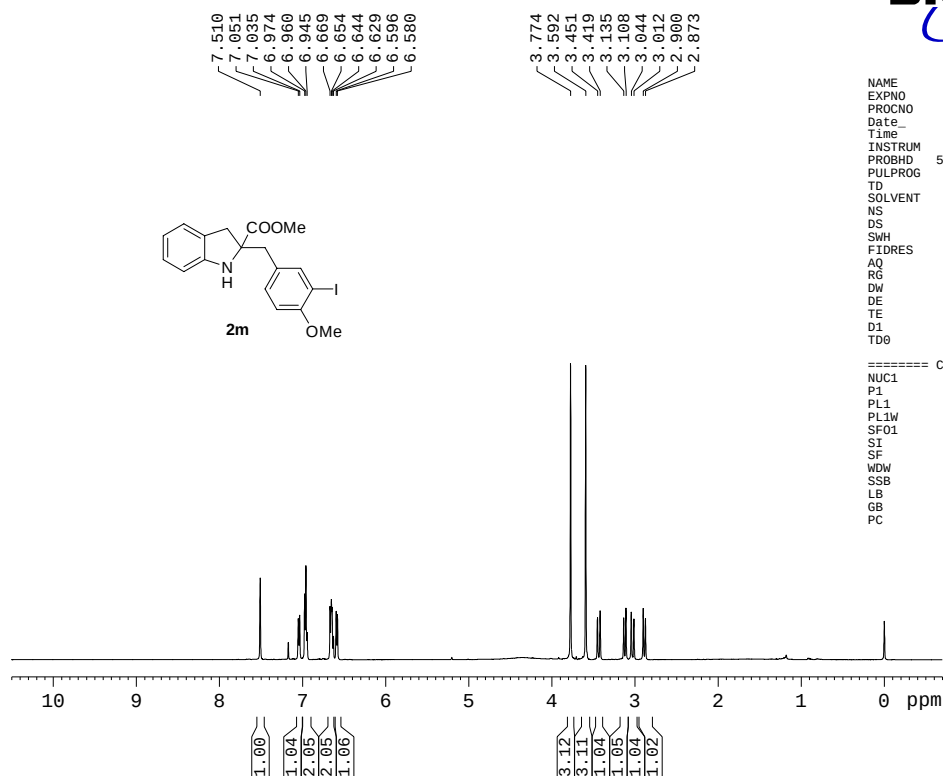
NAME          35648
EXPNO         1
PROCNO        1
Date_         20130321
Time          7.33
INSTRUM       Spect
PROBHD        5 mm PABBO BB-
PULPROG       zgpg30
TD            65536
SOLVENT       CDCl3
NS            1024
DS            4
SWH           29761.904 Hz
FIDRES        0.454131 Hz
AQ            1.1010548 sec
RG            203
DW            16.800 usec
DE            6.50 usec
TE            296.6 K
D1            2.00000000 sec
D11           0.03000000 sec
TD0           1
  
```

```

===== CHANNEL f1 =====
NUC1          13C
P1            11.66 usec
PL1           0.00 dB
PL1W          83.39463043 W
SF01          125.7703643 MHz
  
```

```

===== CHANNEL f2 =====
CPDPRG2       waltz16
NUC2          1H
PCPD2         80.00 usec
PL2           2.50 dB
PL12          17.40 dB
PL13          17.40 dB
PL2W          13.02359581 W
PL12W         0.42143536 W
PL13W         0.42143536 W
SF02          500.1320005 MHz
SI            32768
SF            125.7577966 MHz
WDW           EM
SSB           0
LB            1.00 Hz
GB            0
PC            1.40
  
```



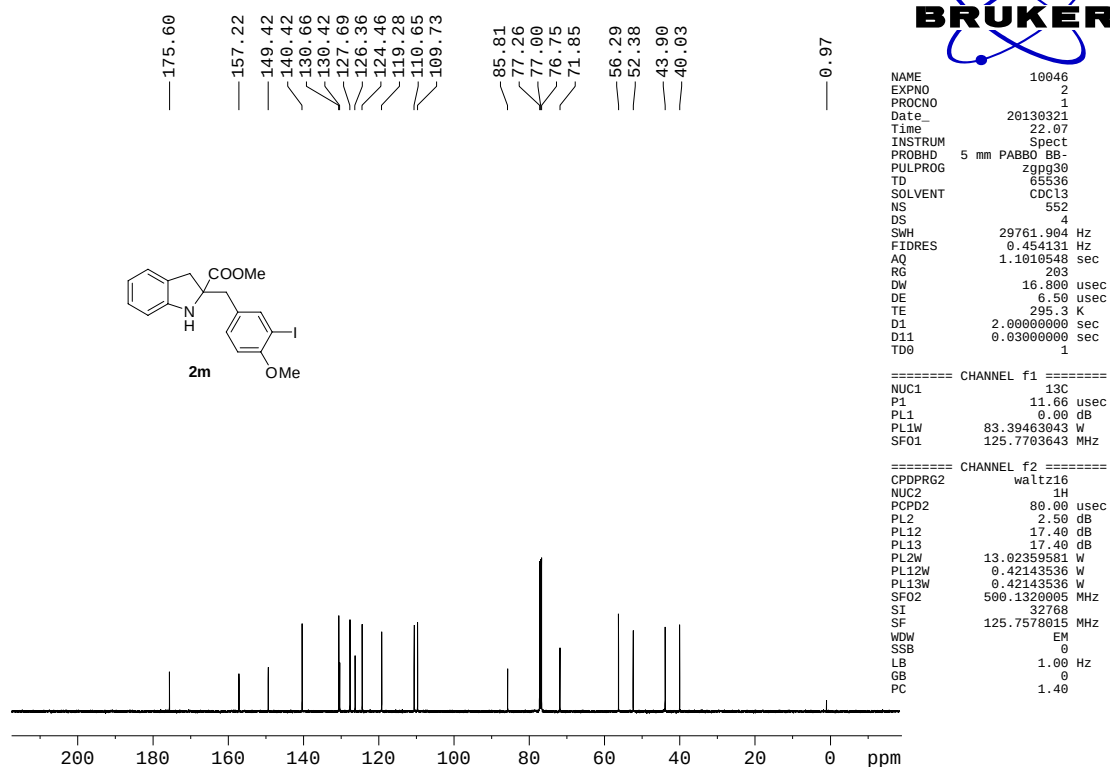
```

NAME          10046
EXPNO         1
PROCNO        1
Date_         20130321
Time          22.00
INSTRUM       Spect
PROBHD        5 mm PABBO BB-
PULPROG       zg30
TD            65536
SOLVENT       CDCl3
NS            16
DS            2
SWH           10330.570 Hz
FIDRES        0.157632 Hz
AQ            3.1719923 sec
RG            57
DW            48.400 usec
DE            6.50 usec
TE            293.6 K
D1            1.00000000 sec
D10           1
  
```

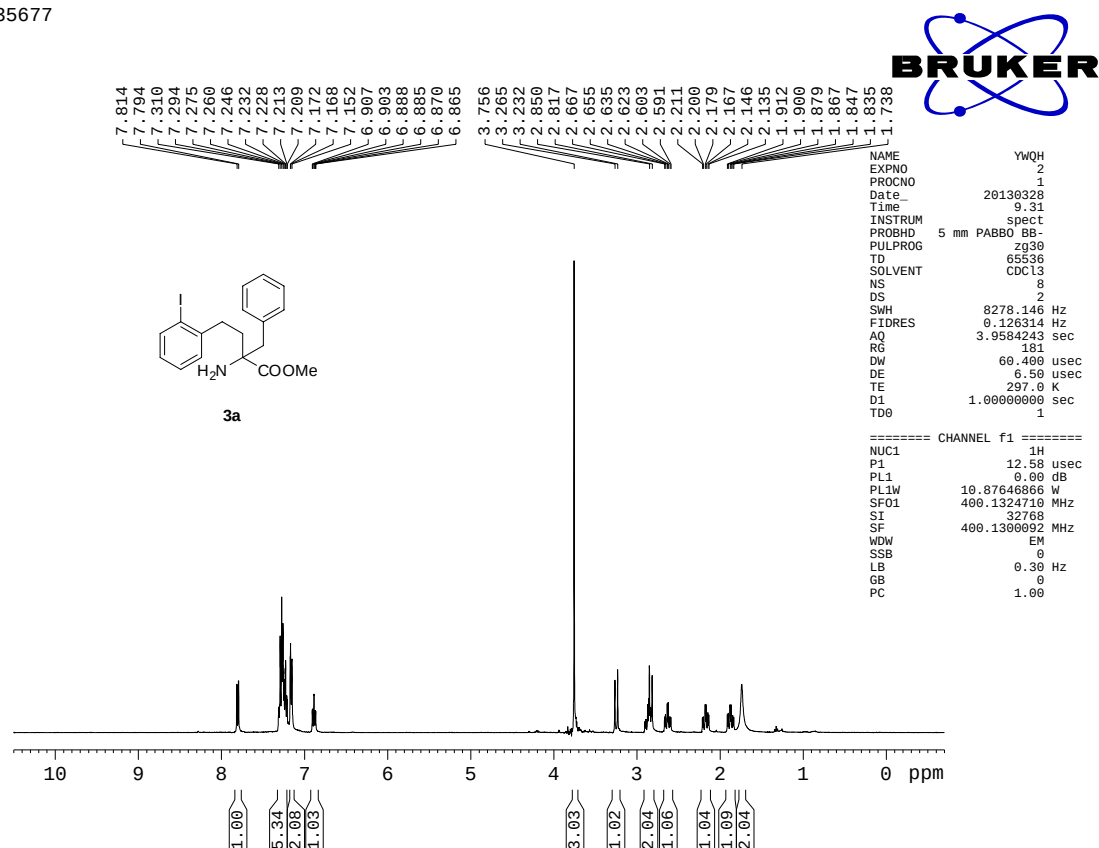
```

===== CHANNEL f1 =====
NUC1          1H
P1            14.00 usec
PL1           2.50 dB
PL1W          13.02359581 W
SF01          500.1330005 MHz
SI            32768
SF            500.1300658 MHz
WDW           EM
SSB           0
LB            0.30 Hz
GB            0
PC            1.00
  
```

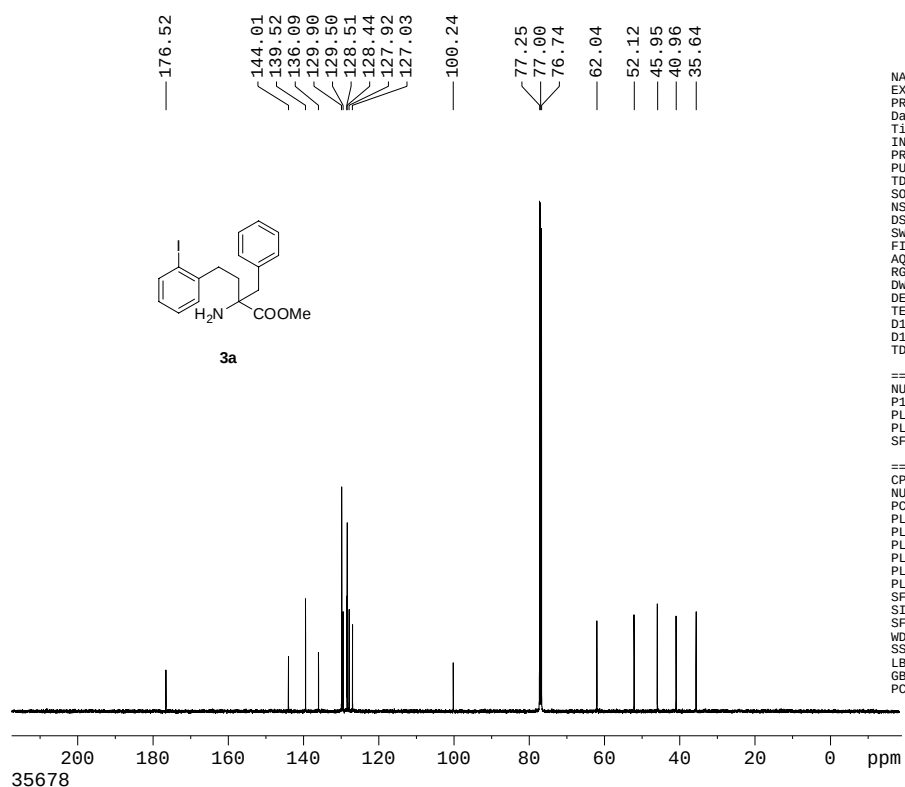

10046



35677



35677



```

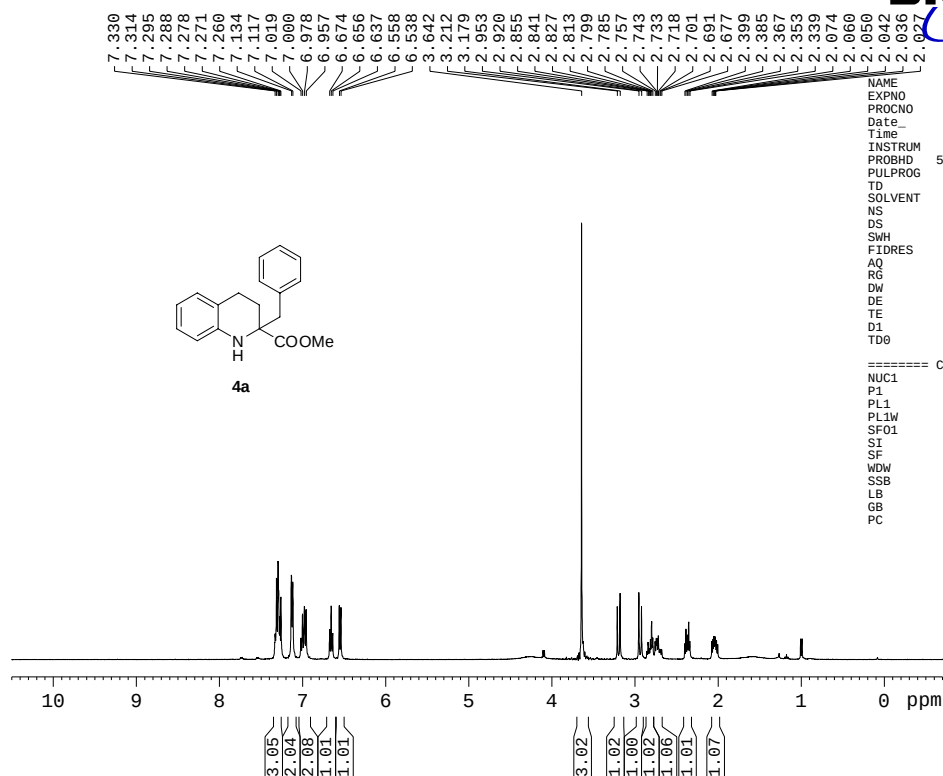
NAME      35677
EXPNO     1
PROCNO    1
Date_     20130329
Time      4.53
INSTRUM   spect
PROBHD    5 mm PABBO BB-
PULPROG   zgpg30
TD         65536
SOLVENT   CDCl3
NS         1024
DS         4
SWH        29761.904 Hz
FIDRES     0.454131 Hz
AQ         1.1010548 sec
RG         203
DW         16.800 usec
DE         6.50 usec
TE         296.5 K
D1         2.00000000 sec
D11        0.03000000 sec
TD0        1
  
```

```

===== CHANNEL f1 =====
NUC1      13C
P1        11.66 usec
PL1       0.00 dB
PL1W      83.39463043 W
SF01      125.7703643 MHz
  
```

```

===== CHANNEL f2 =====
CPDPRG2   waltz16
NUC2       1H
PCPD2     80.00 usec
PL2        2.50 dB
PL12       17.40 dB
PL13       17.40 dB
PL2W      13.02359581 W
PL12W      0.42143536 W
PL13W      0.42143536 W
SF02      500.1320005 MHz
SI         32768
SF         125.75777976 MHz
WDW        EM
SSB         0
LB         1.00 Hz
GB          0
PC         1.40
  
```



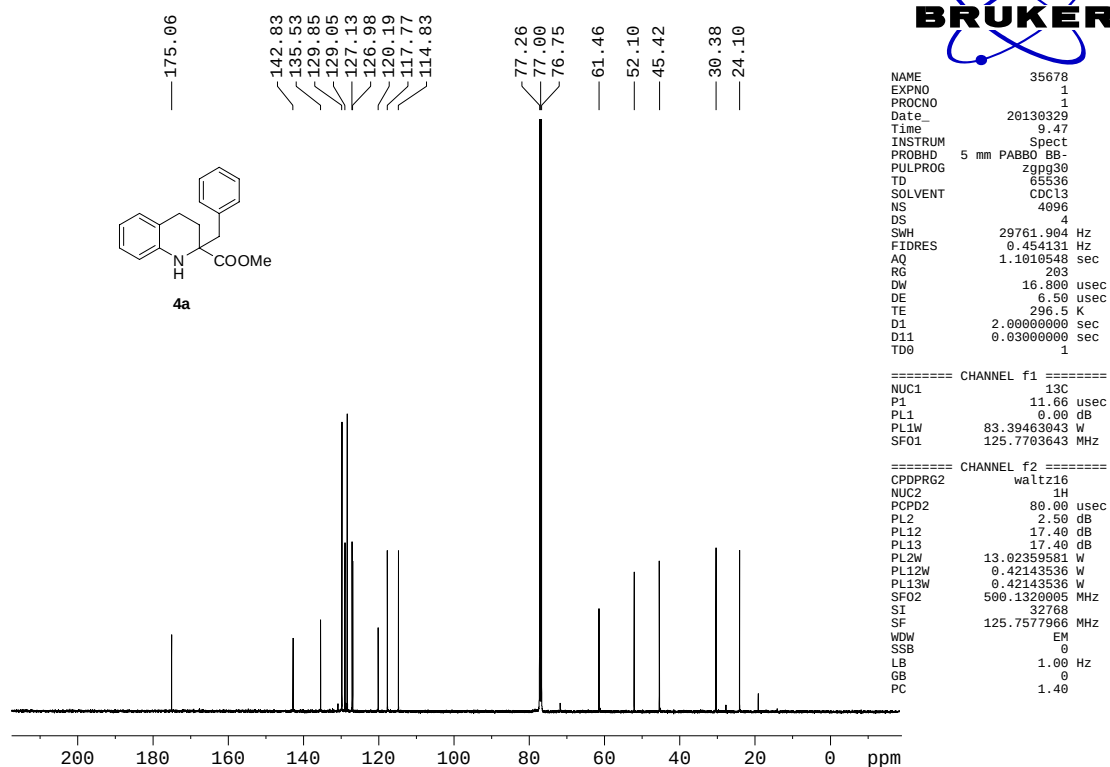
```

NAME      YWQH
EXPNO     78
PROCNO    1
Date_     20130328
Time      20.55
INSTRUM   spect
PROBHD    5 mm PABBO BB-
PULPROG   zg30
TD         65536
SOLVENT   CDCl3
NS         8
DS         2
SWH        8278.146 Hz
FIDRES     0.126314 Hz
AQ         3.9584243 sec
RG         228.1
DW         60.400 usec
DE         6.50 usec
TE         297.2 K
D1         1.00000000 sec
TD0        1
  
```

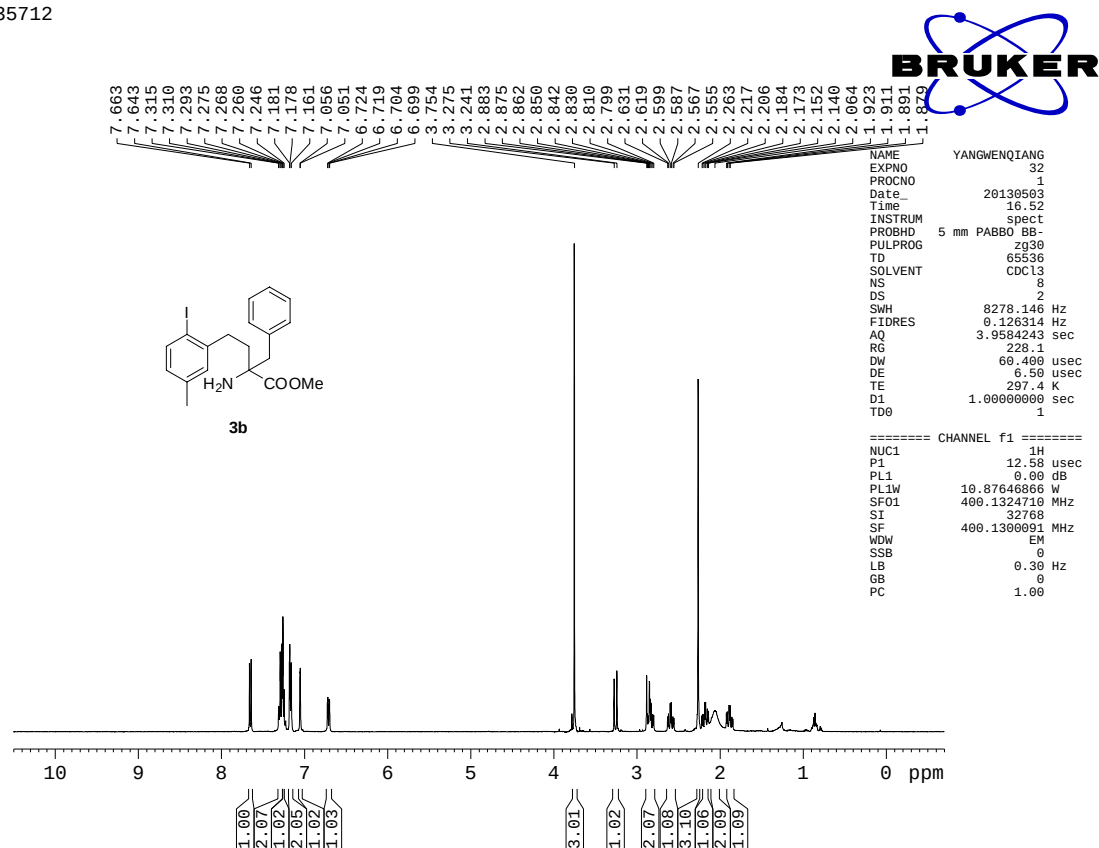
```

===== CHANNEL f1 =====
NUC1       1H
P1         12.58 usec
PL1        0.00 dB
PL1W      10.87646866 W
SF01      400.1324710 MHz
SI         32768
SF         400.1300089 MHz
WDW        EM
SSB         0
LB         0.30 Hz
GB          0
PC         1.00
  
```

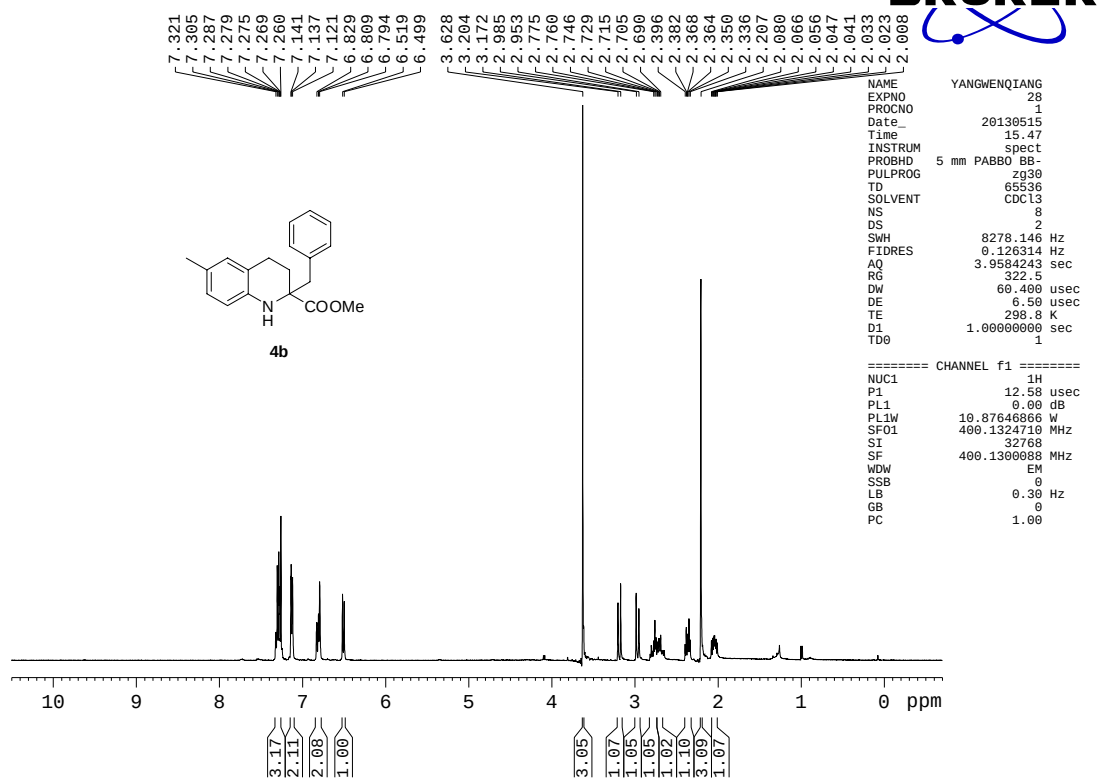
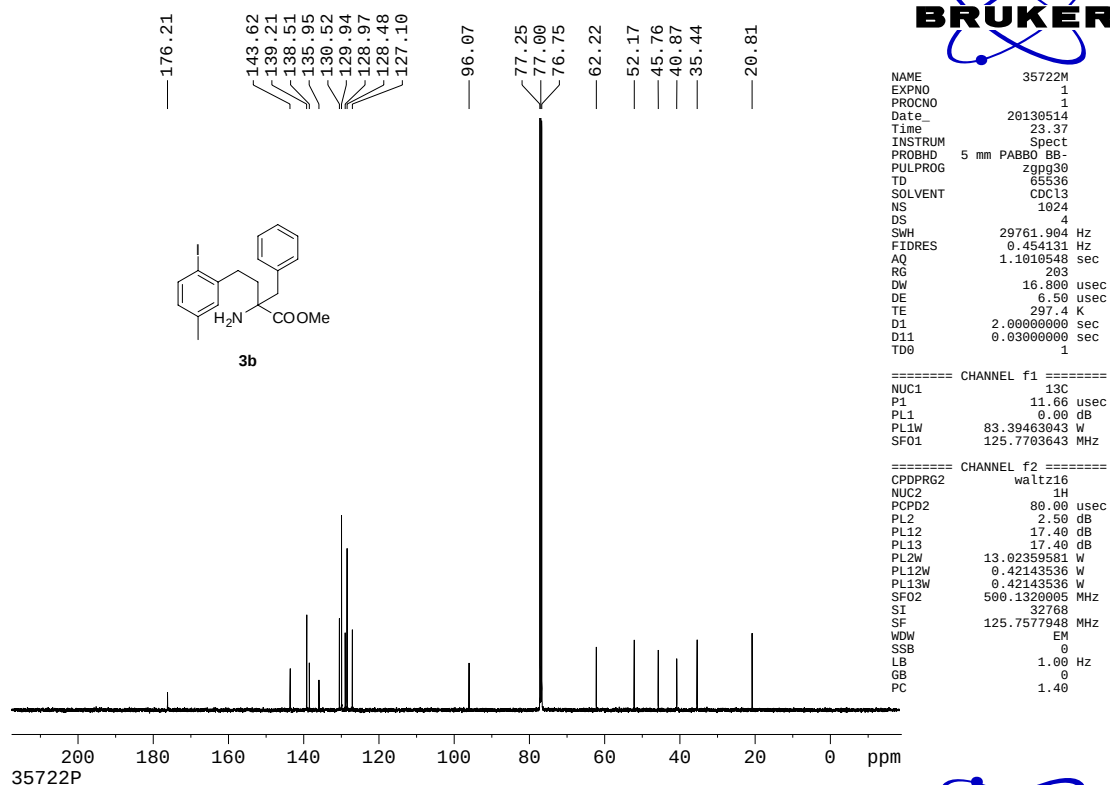
35678



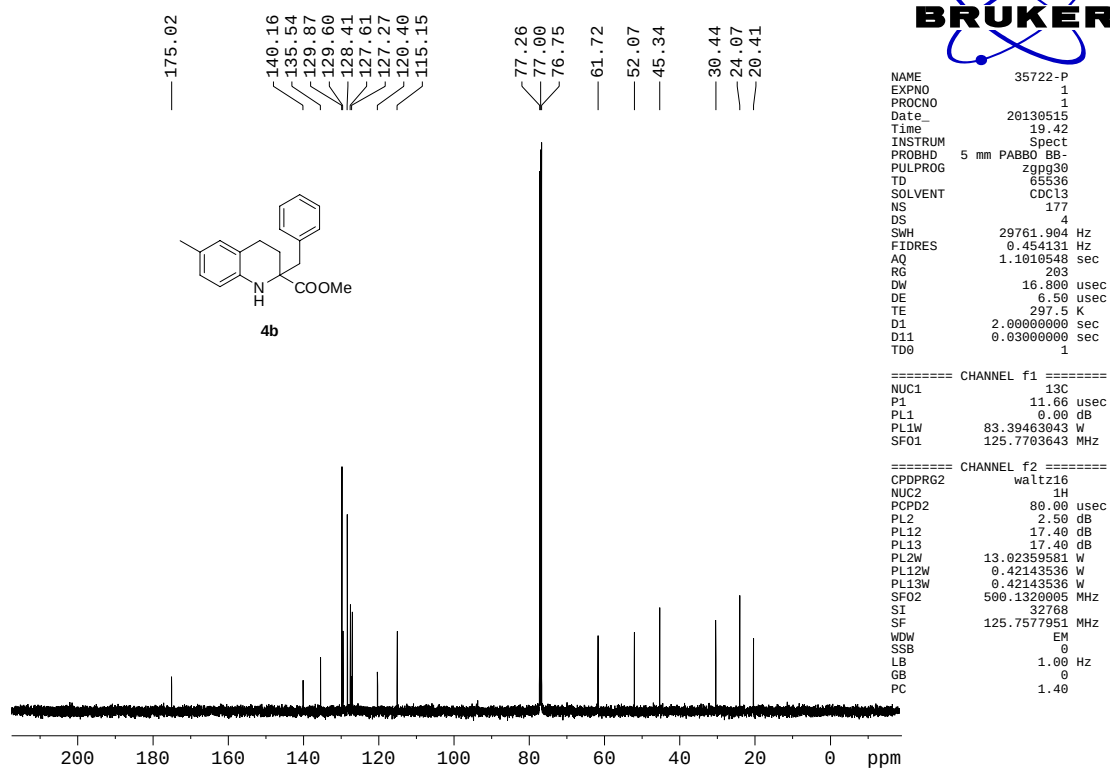
35712



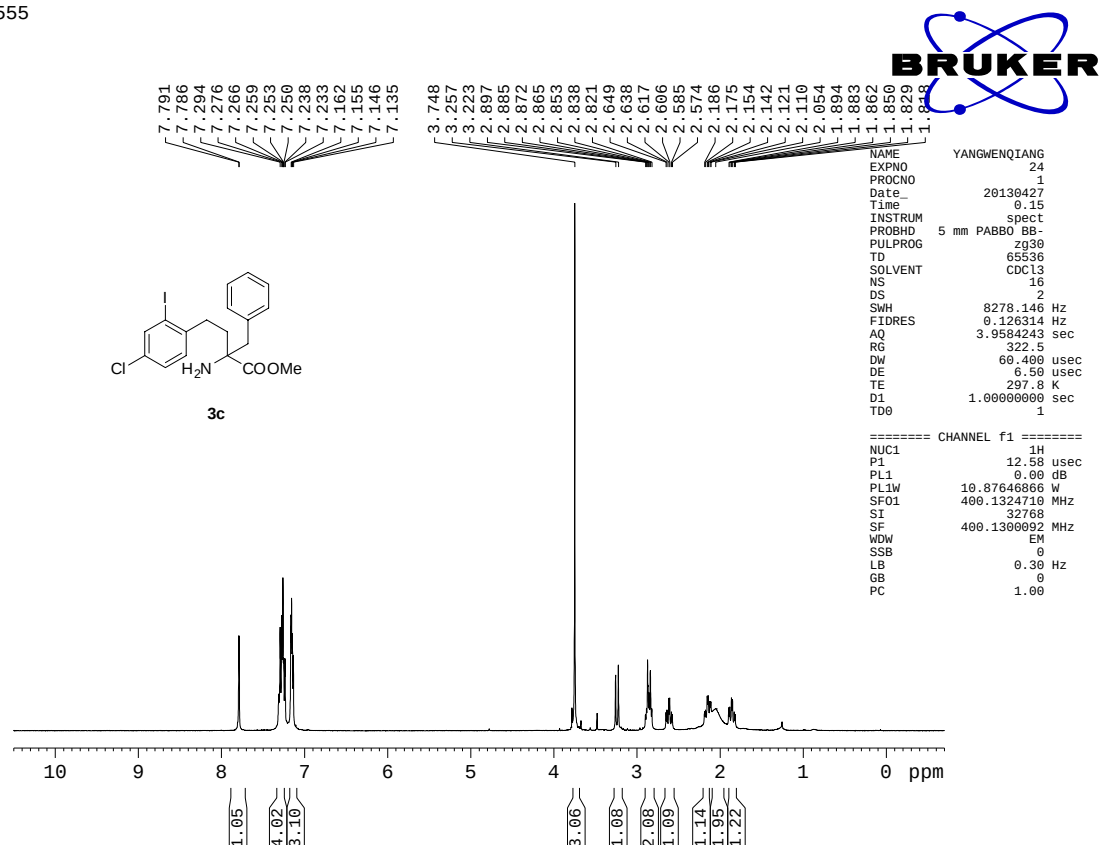
35722M



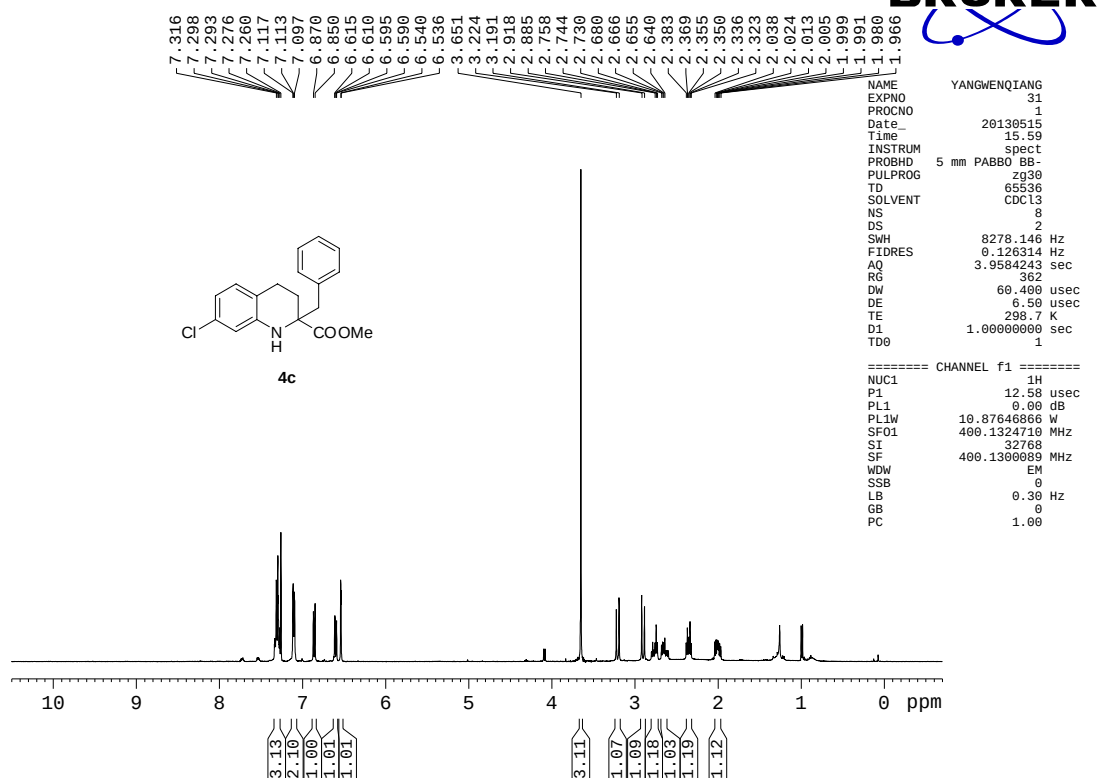
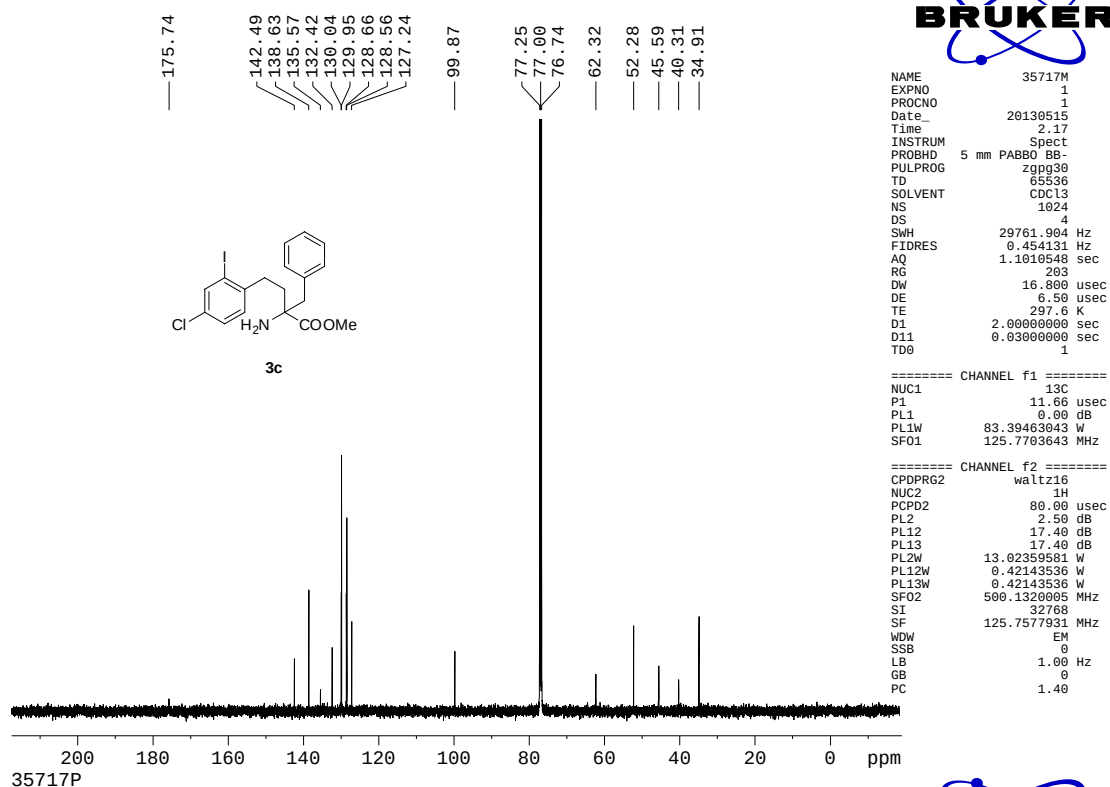
35722-P



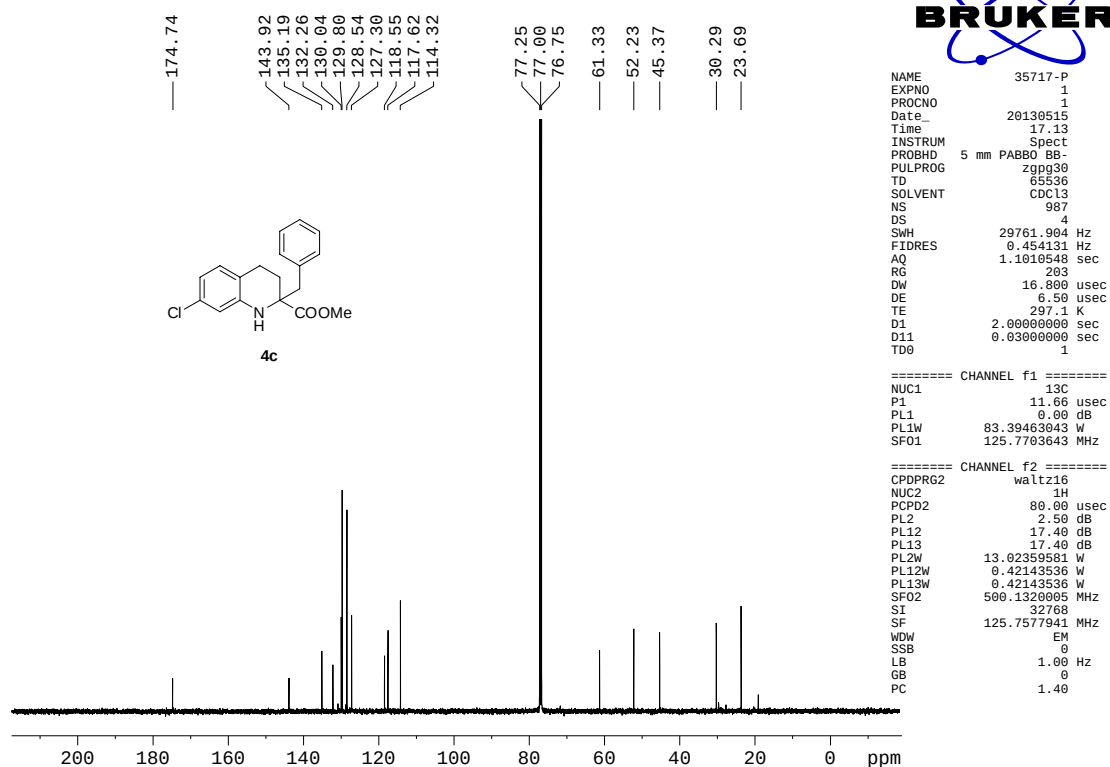
555



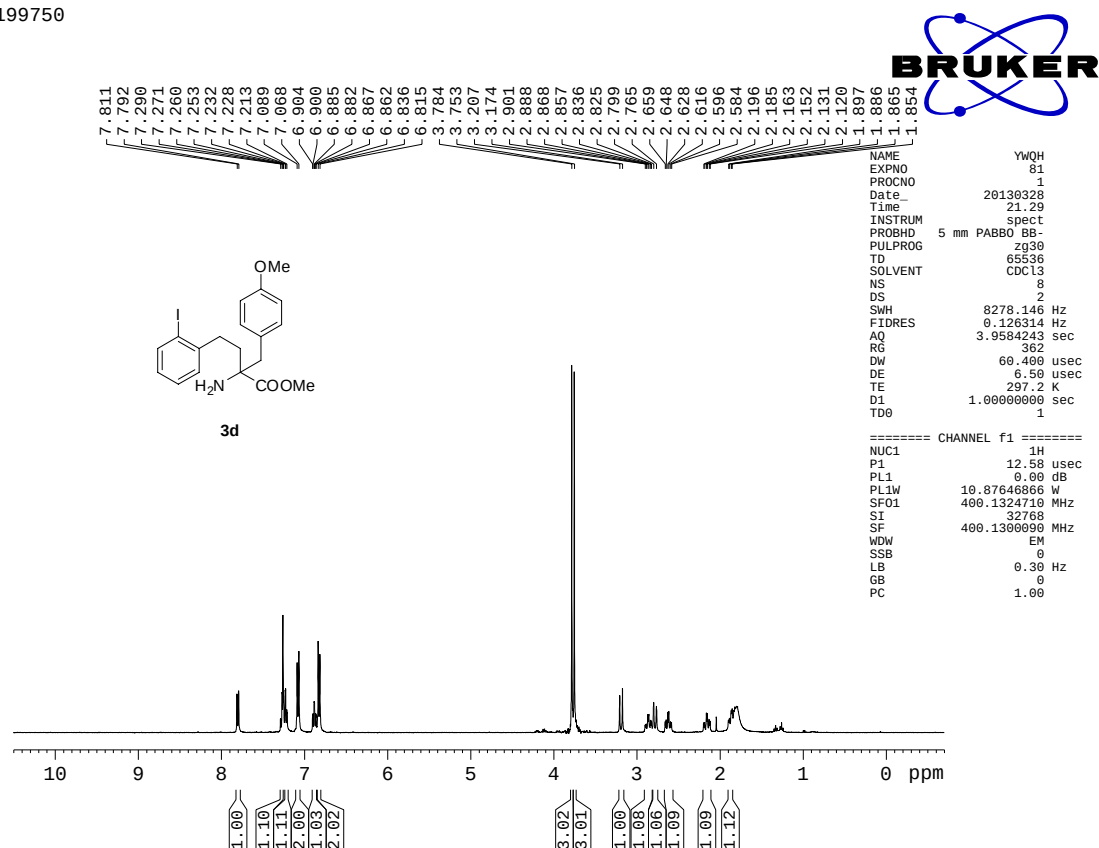
35717M



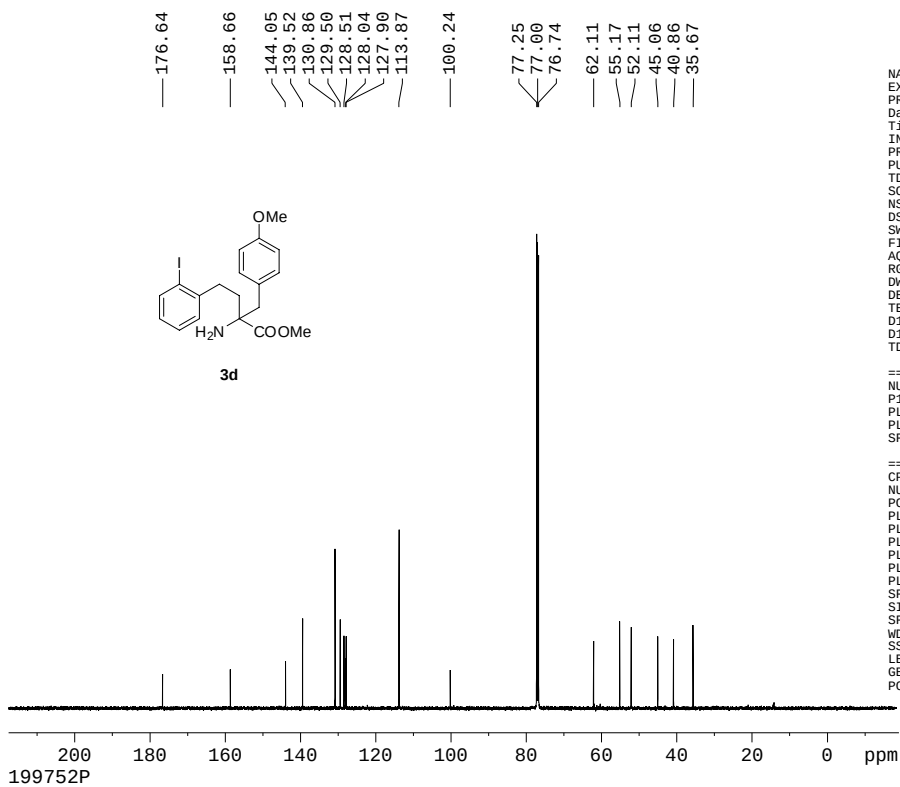
35717-P



199750



ly199750



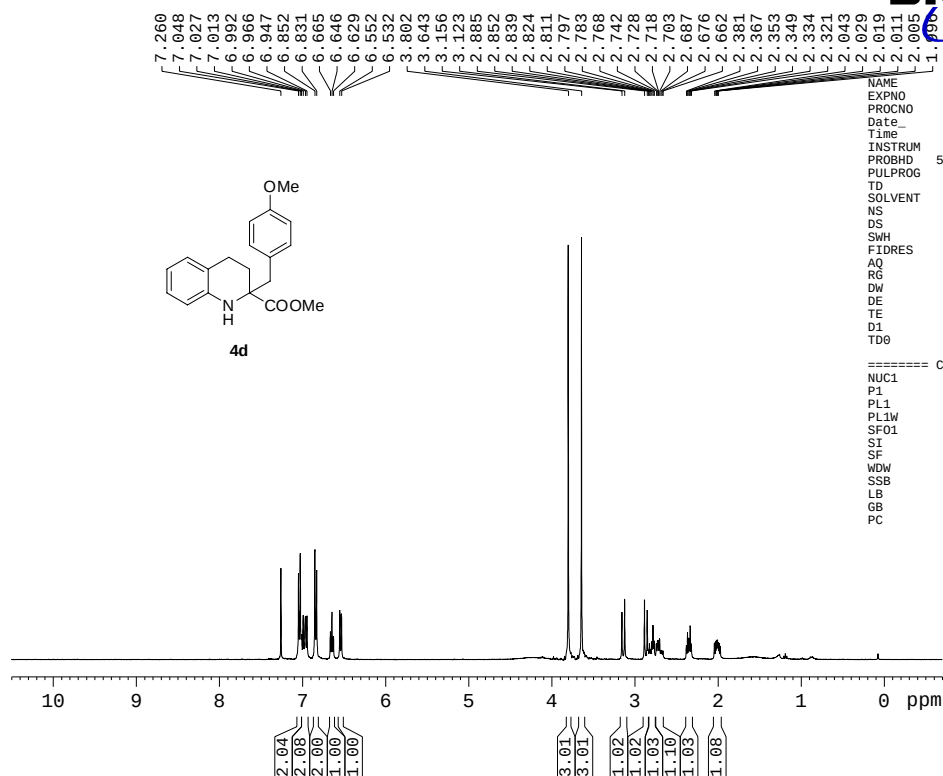
```

NAME      ly199750
EXPNO     1
PROCNO    1
Date_     20130329
Time      5.58
INSTRUM   spect
PROBHD    5 mm PABBO BB-
PULPROG   zgpg30
TD         65536
SOLVENT   CDCl3
NS         1024
DS         4
SWH        29761.904 Hz
FIDRES     0.454131 Hz
AQ         1.1010548 sec
RG         203
DW         16.800 usec
DE         6.50 usec
TE         296.7 K
D1         2.00000000 sec
D11        0.03000000 sec
TD0        1

===== CHANNEL f1 =====
NUC1       13C
P1         11.66 usec
PL1        0.00 dB
PL1W       83.39463043 W
SF01       125.7703643 MHz

===== CHANNEL f2 =====
CPDPRG2    waltz16
NUC2        1H
PCPD2       80.00 usec
PL2         2.50 dB
PL12        17.40 dB
PL13        17.40 dB
PL1W        13.02359581 W
PL12W       0.42143536 W
PL13W       0.42143536 W
SF02       500.1320005 MHz
SI          32768
SF         125.7577968 MHz
WDW         EM
SSB         0
LB          1.00 Hz
GB          0
PC          1.40

```



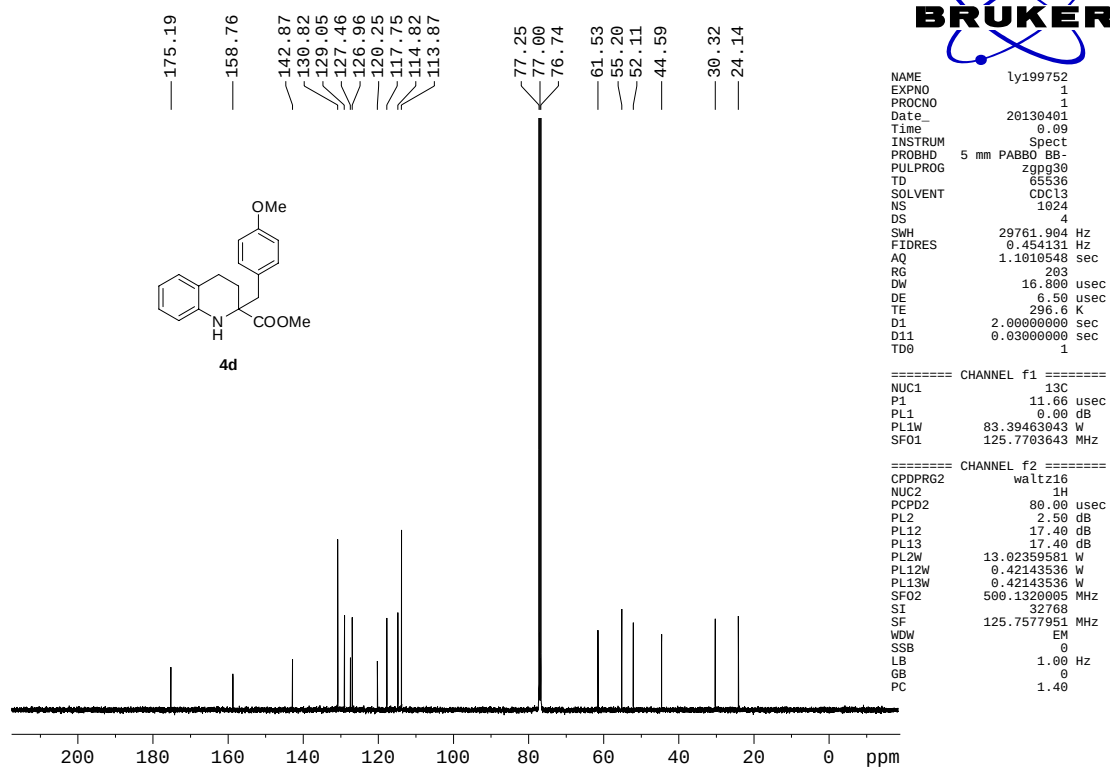
```

NAME      YWQH
EXPNO     20
PROCNO    1
Date_     20130331
Time      15.39
INSTRUM   spect
PROBHD    5 mm PABBO BB-
PULPROG   zg30
TD         65536
SOLVENT   CDCl3
NS         8
DS         2
SWH        8278.146 Hz
FIDRES     0.126314 Hz
AQ         3.9584243 sec
RG         362
DW         60.400 usec
DE         6.50 usec
TE         297.0 K
D1         1.00000000 sec
TD0        1

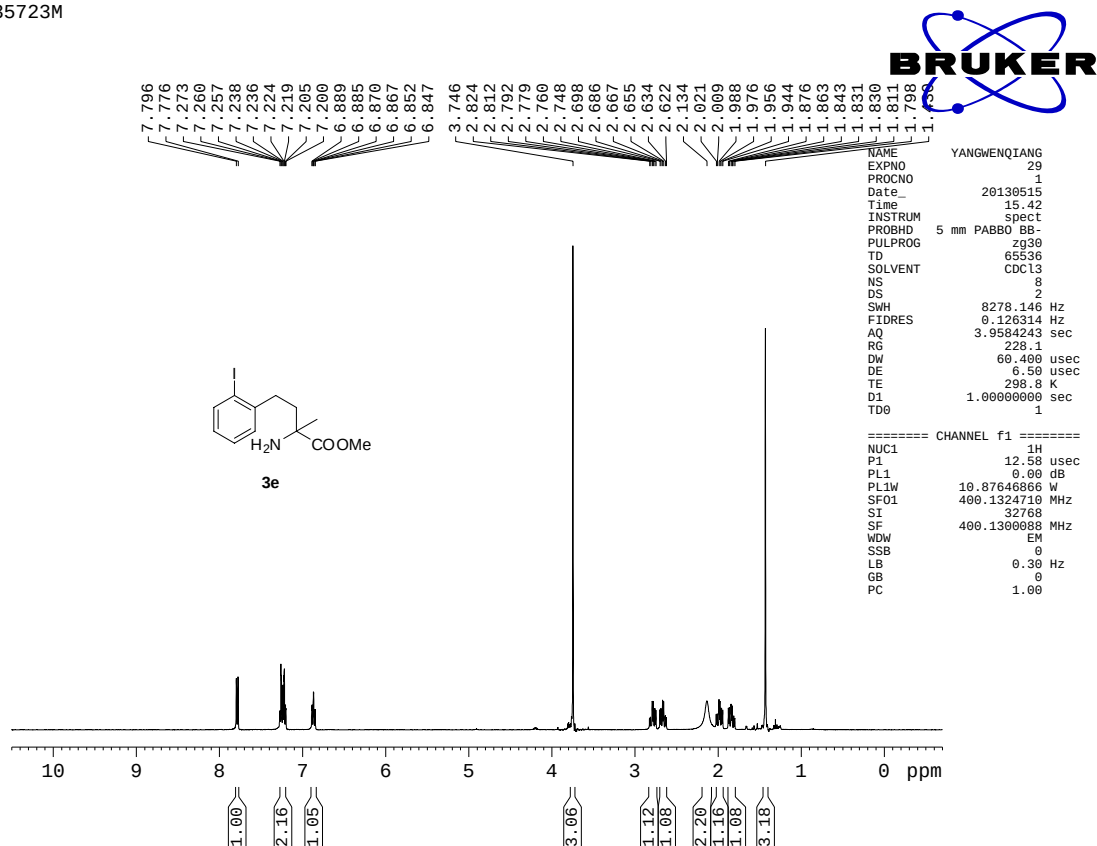
===== CHANNEL f1 =====
NUC1       1H
P1         12.58 usec
PL1        0.00 dB
PL1W       10.87646866 W
SF01       400.1324710 MHz
SI          32768
SF         400.1300090 MHz
WDW         EM
SSB         0
LB          0.30 Hz
GB          0
PC          1.00

```

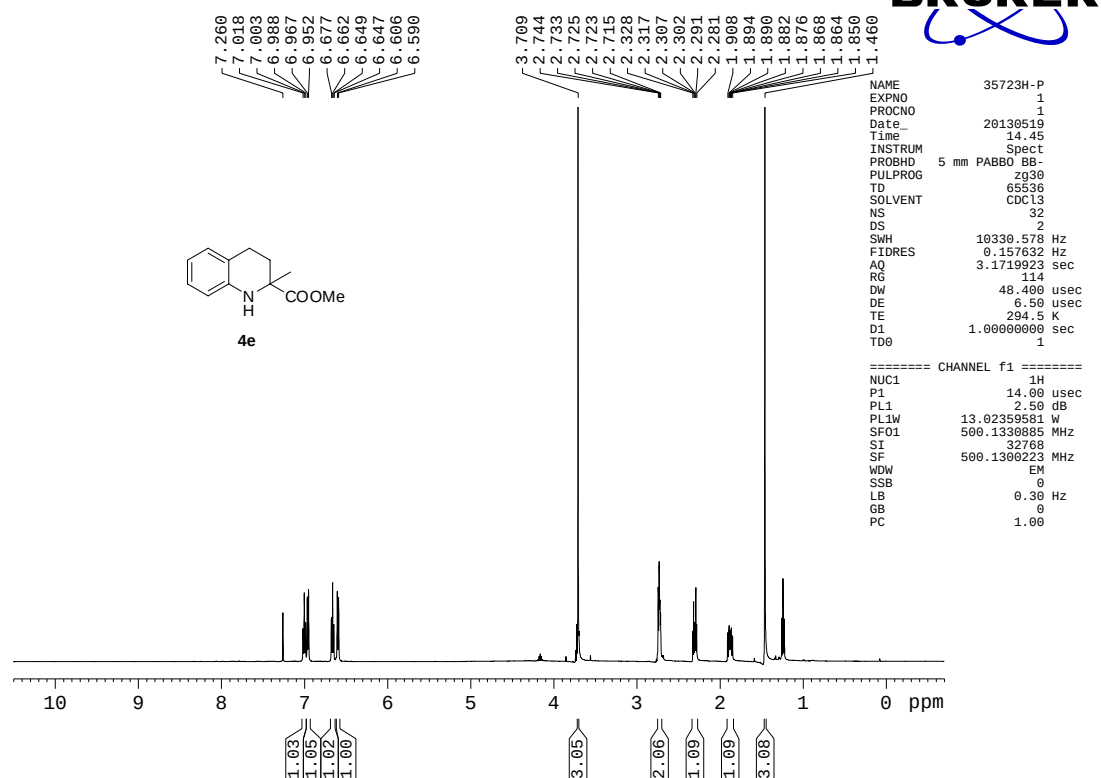
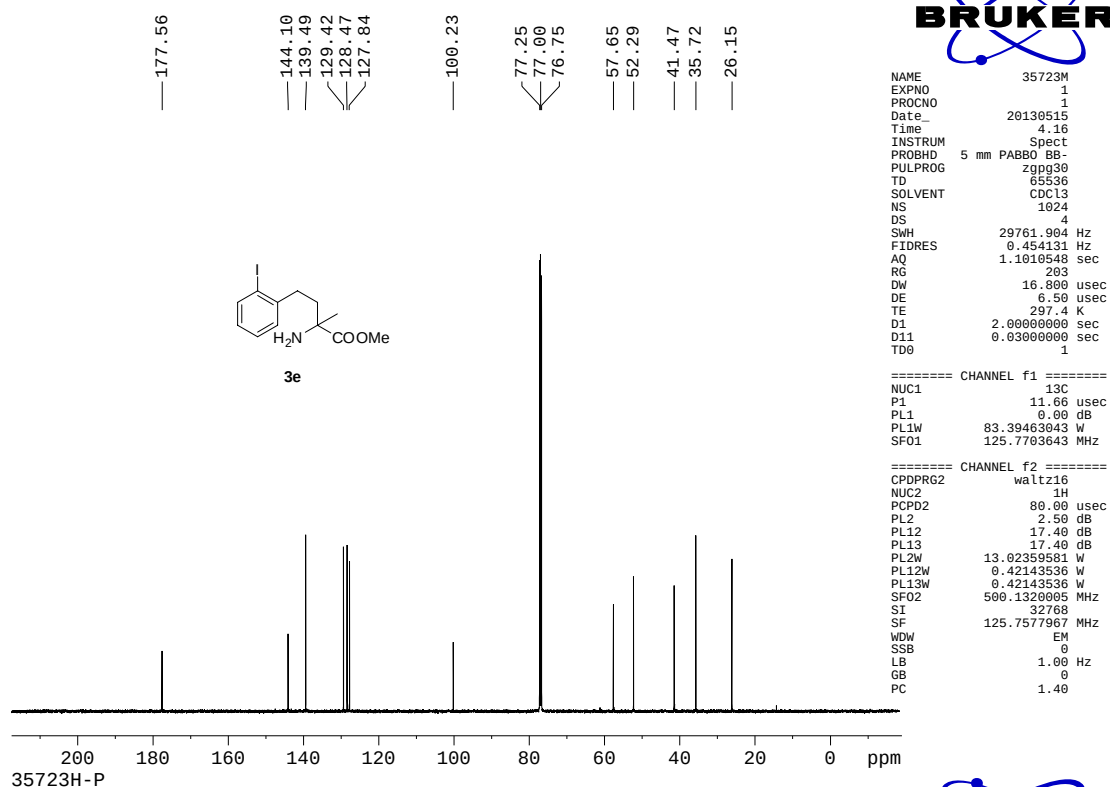

ly199752



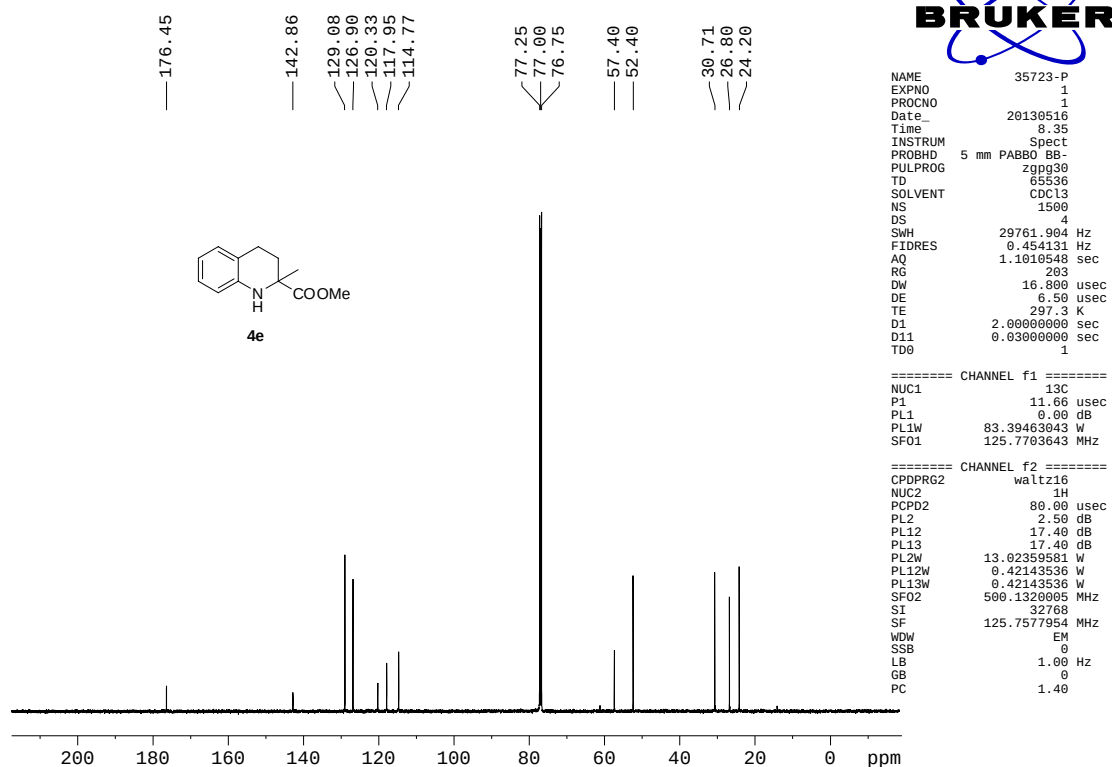
35723M



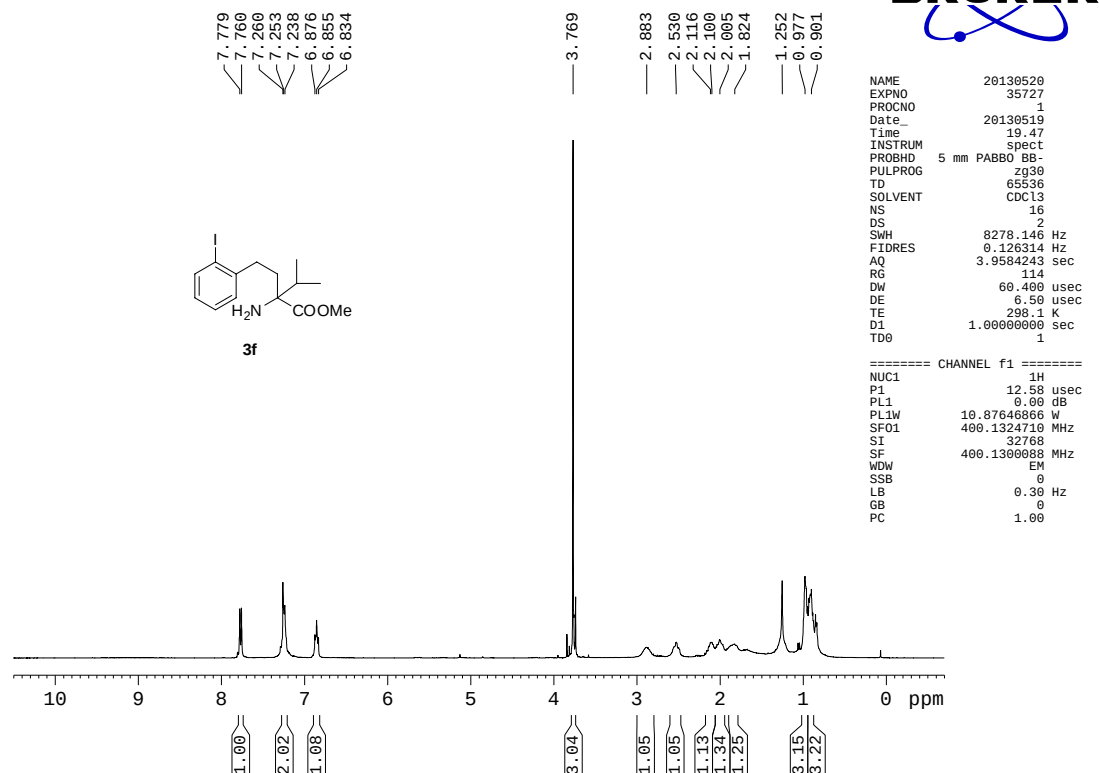
35723M



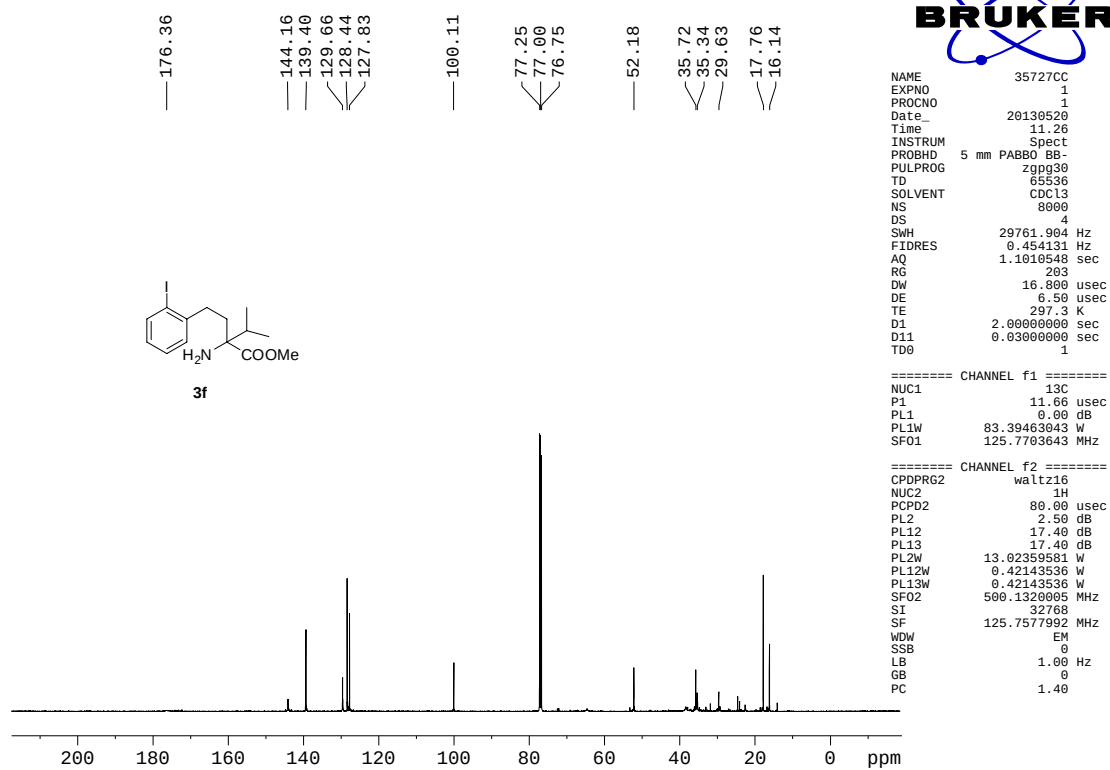
35723-P



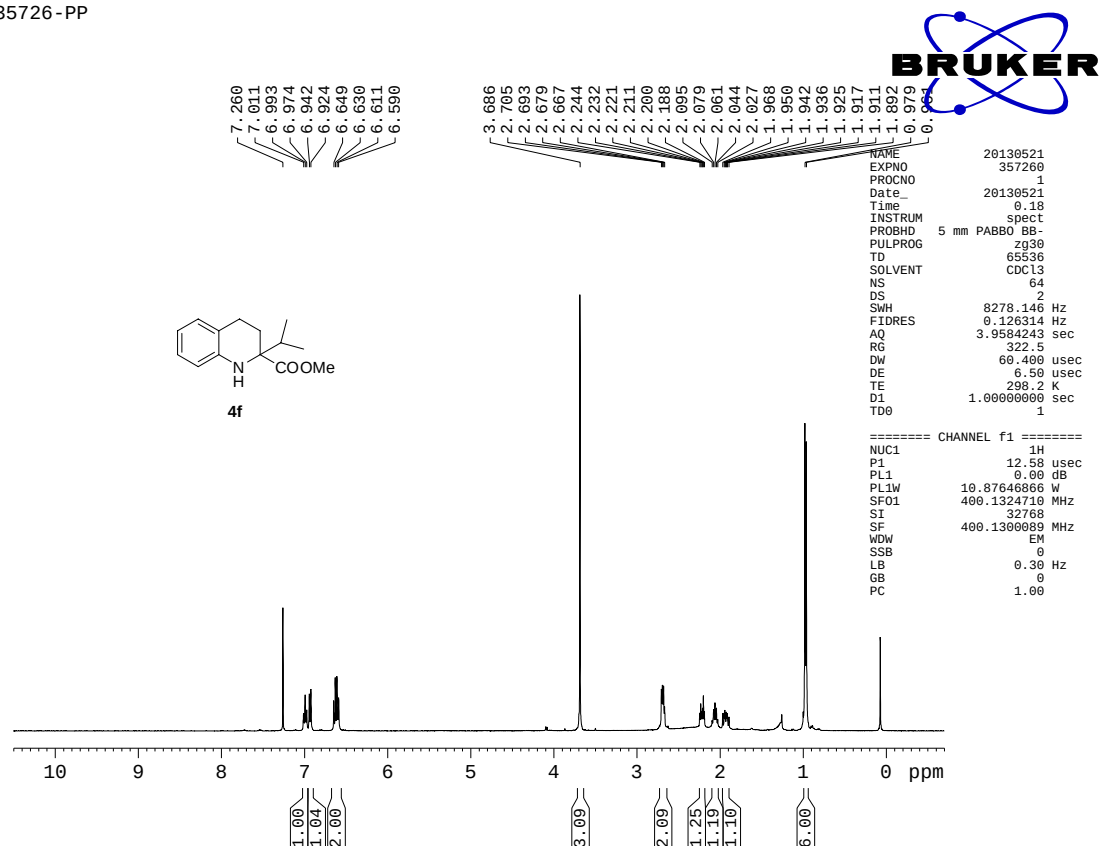
35727



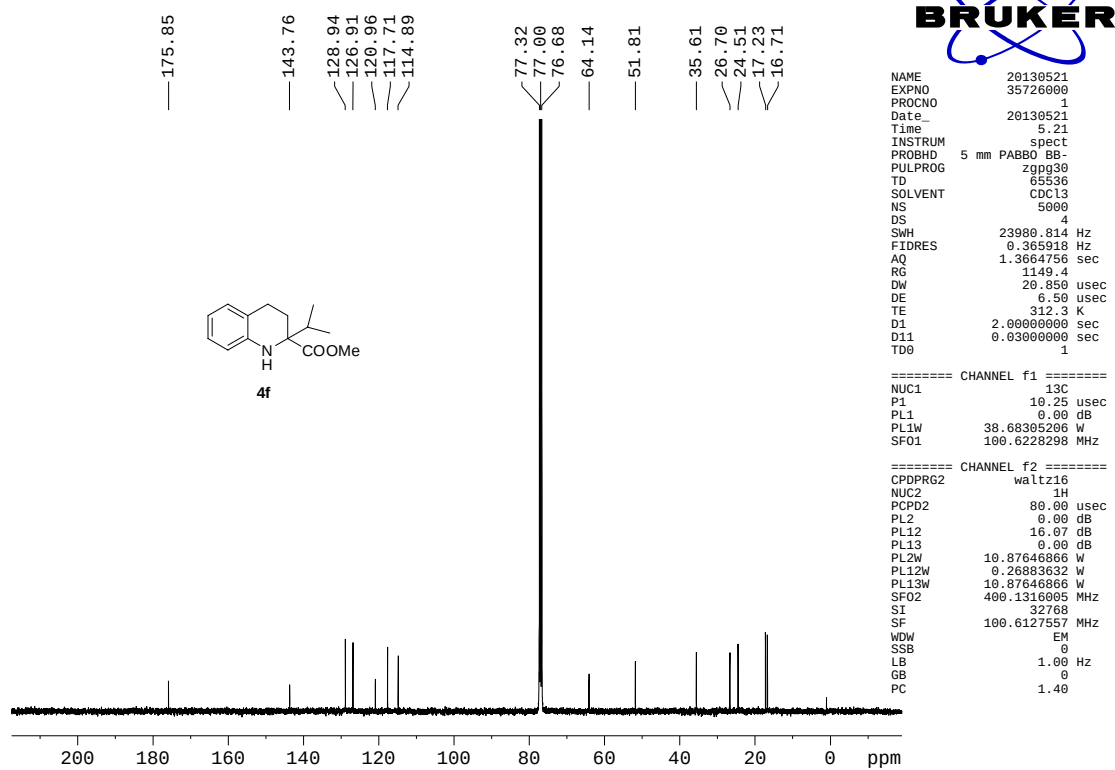
35727CC



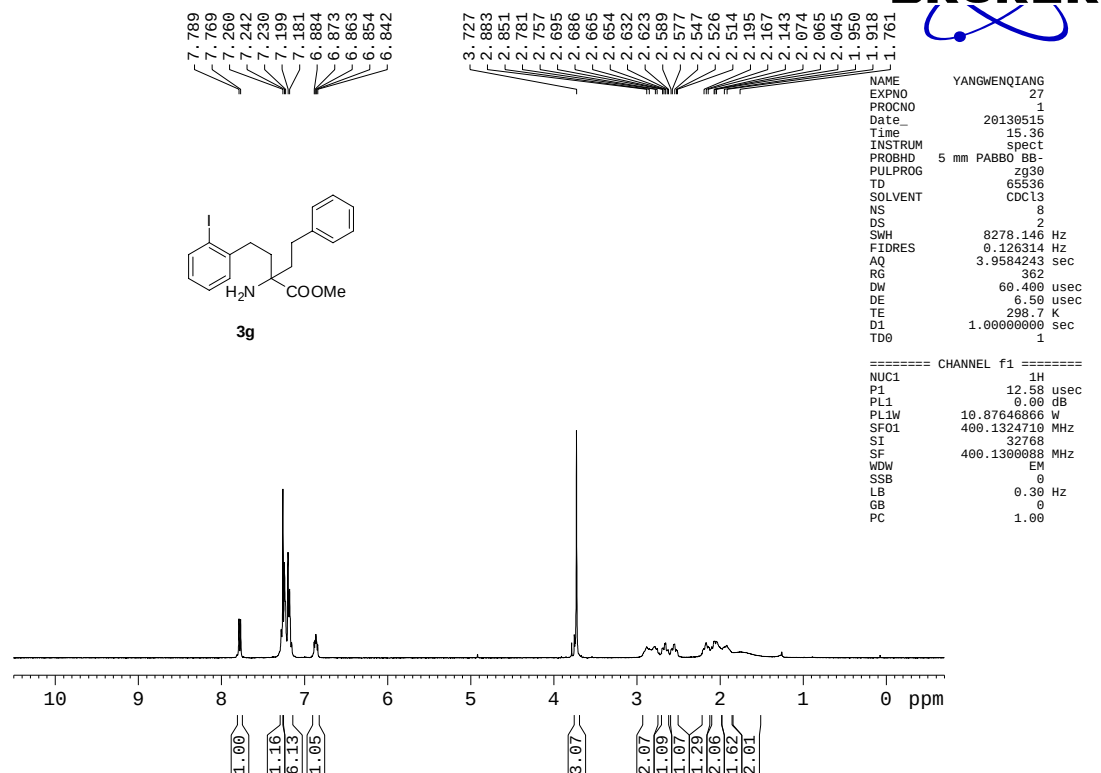
35726-PP



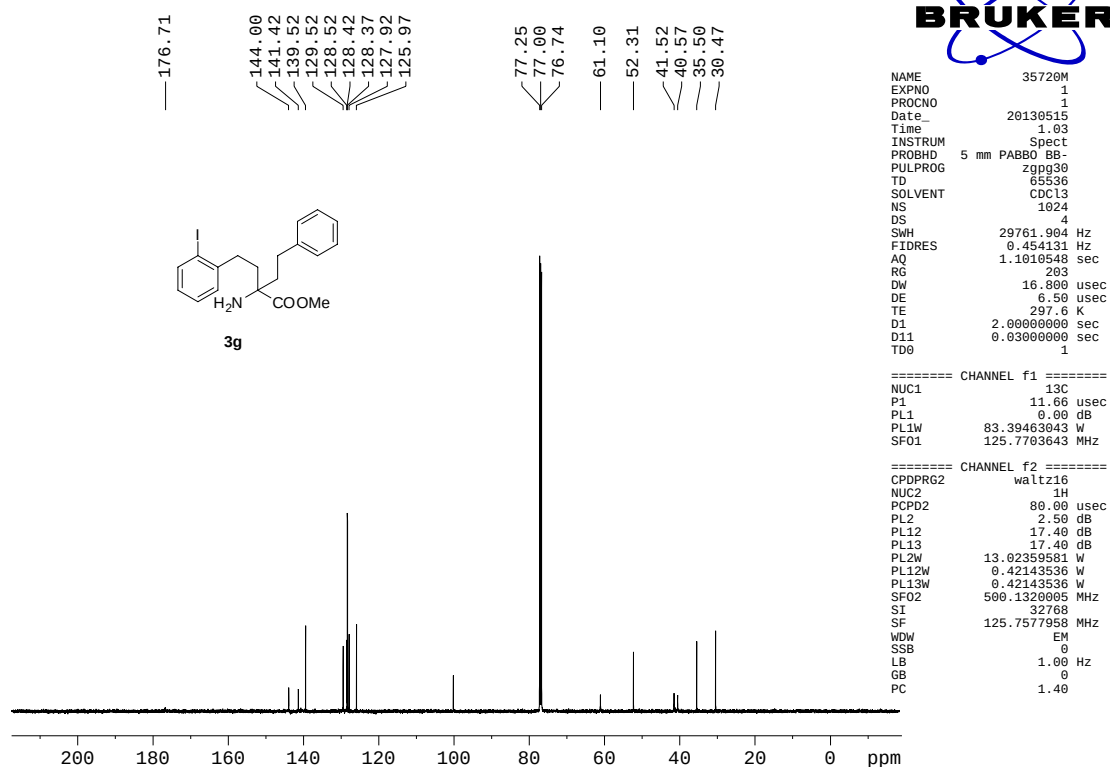
35726-P-C0



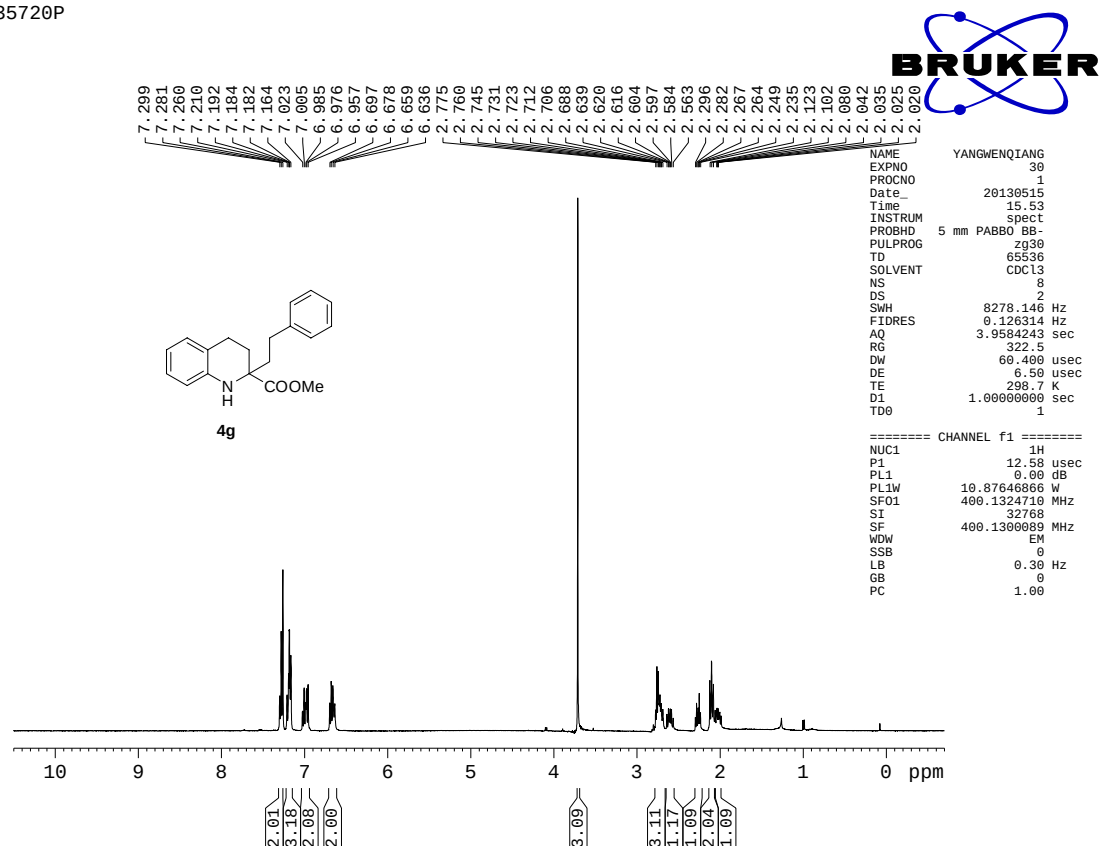
35720M



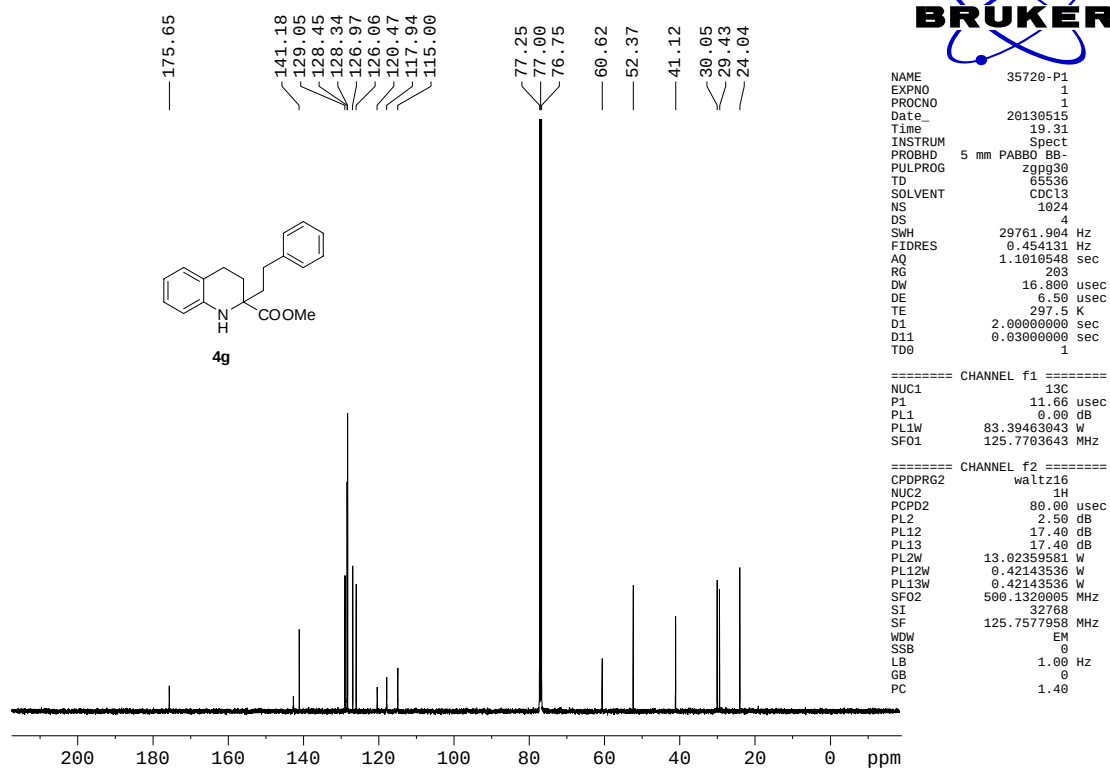
35720M



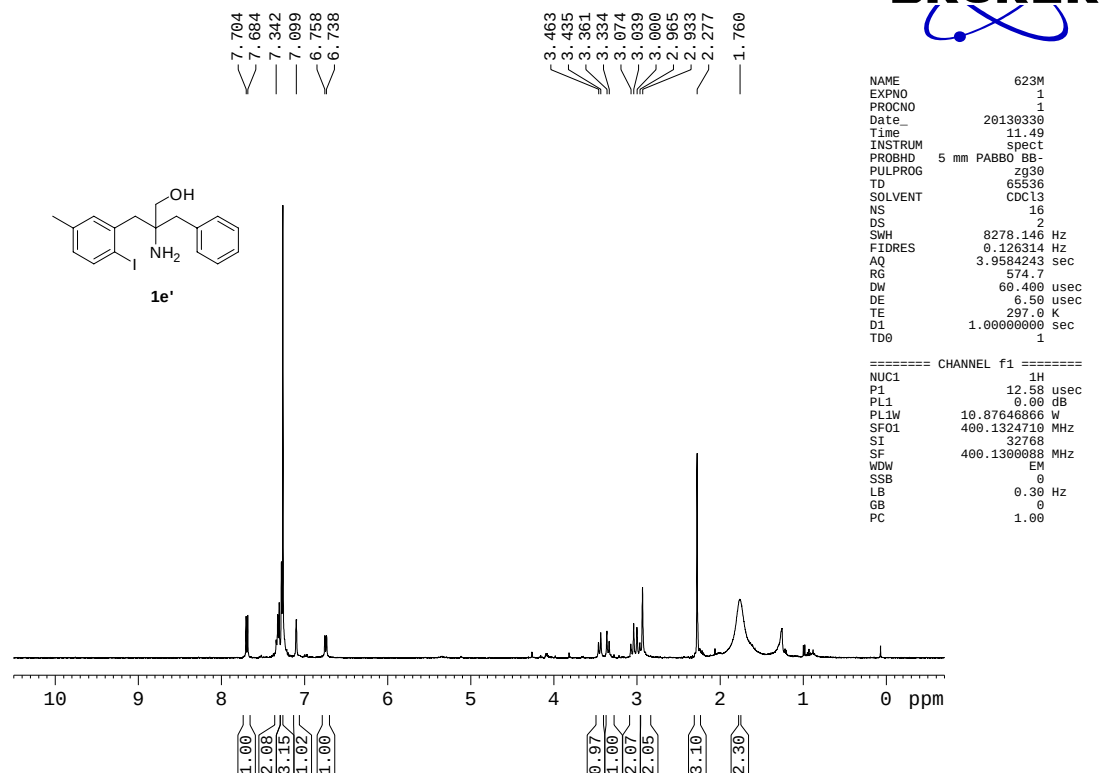
35720P



35720-P1



623M

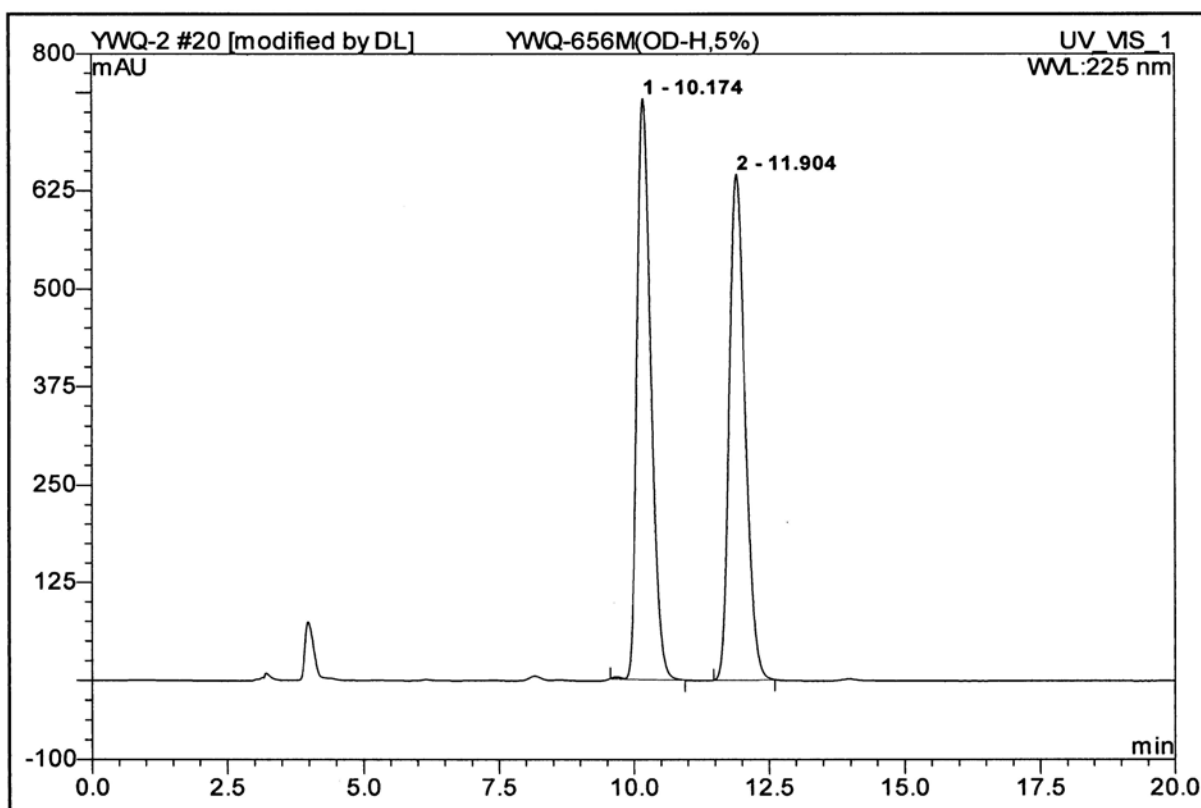


7. HPLC Spectra.

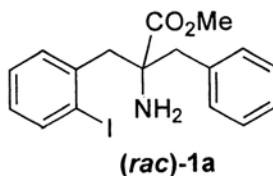
20 YWQ-656M(OD-H,5%)

Sample Name: YWQ-656M(OD-H,5%)
Vial Number: 15
Sample Type: unknown
Control Program: pql20091111
Quantif. Method: pql20091111
Recording Time: 2:33 PM
Run Time (min): 20.00

Injection Volume: 10.0
Channel: UV_VIS_1
Wavelength: 225
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



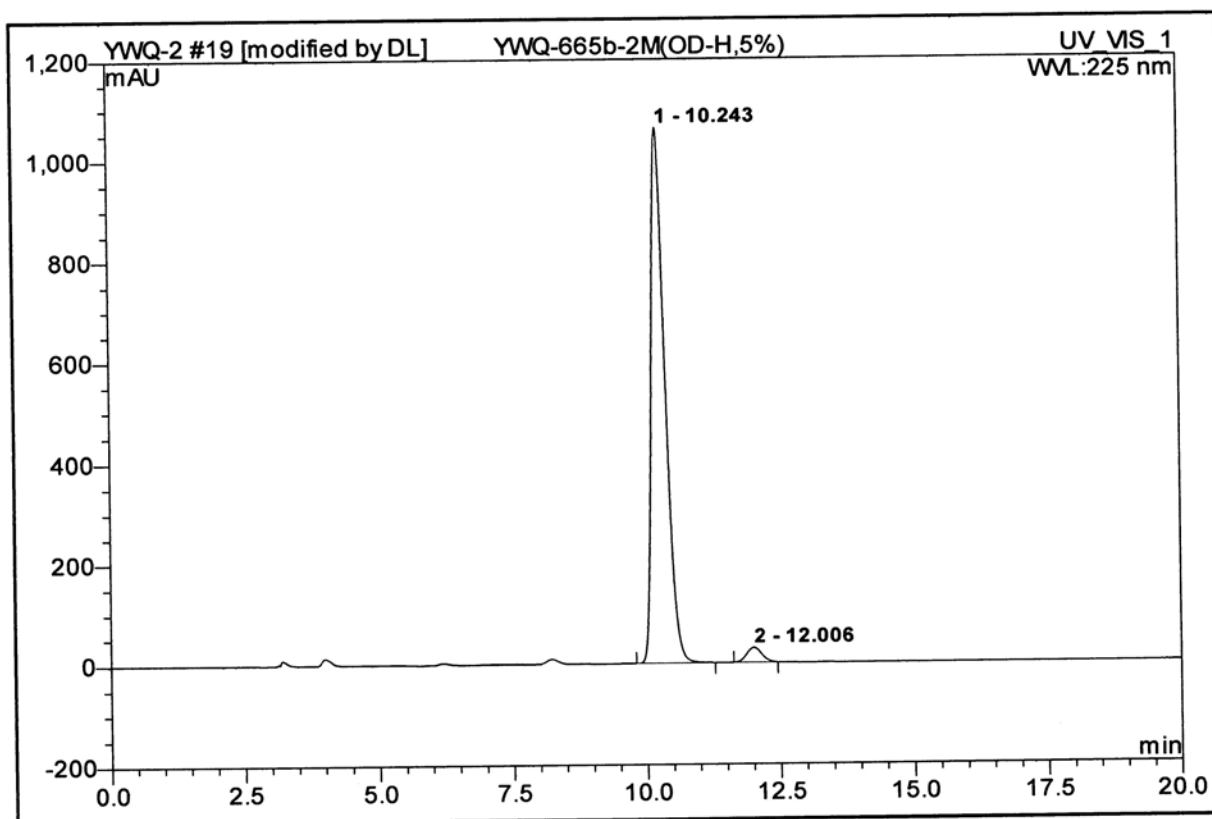
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	10.17	n.a.	740.691	221.217	50.00	n.a.	BMB*
2	11.90	n.a.	644.769	221.246	50.00	n.a.	BMB*
Total:			1385.461	442.462	100.00	0.000	



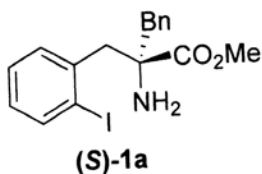
19 YWQ-665b-2M(OD-H,5%)

Sample Name: YWQ-665b-2M(OD-H,5%)
Vial Number: 14
Sample Type: unknown
Control Program: pql20091111
Quantif. Method: pql20091111
Recording Time: 2:12 PM
Run Time (min): 20.00

Injection Volume: 10.0
Channel: UV_VIS_1
Wavelength: 225
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



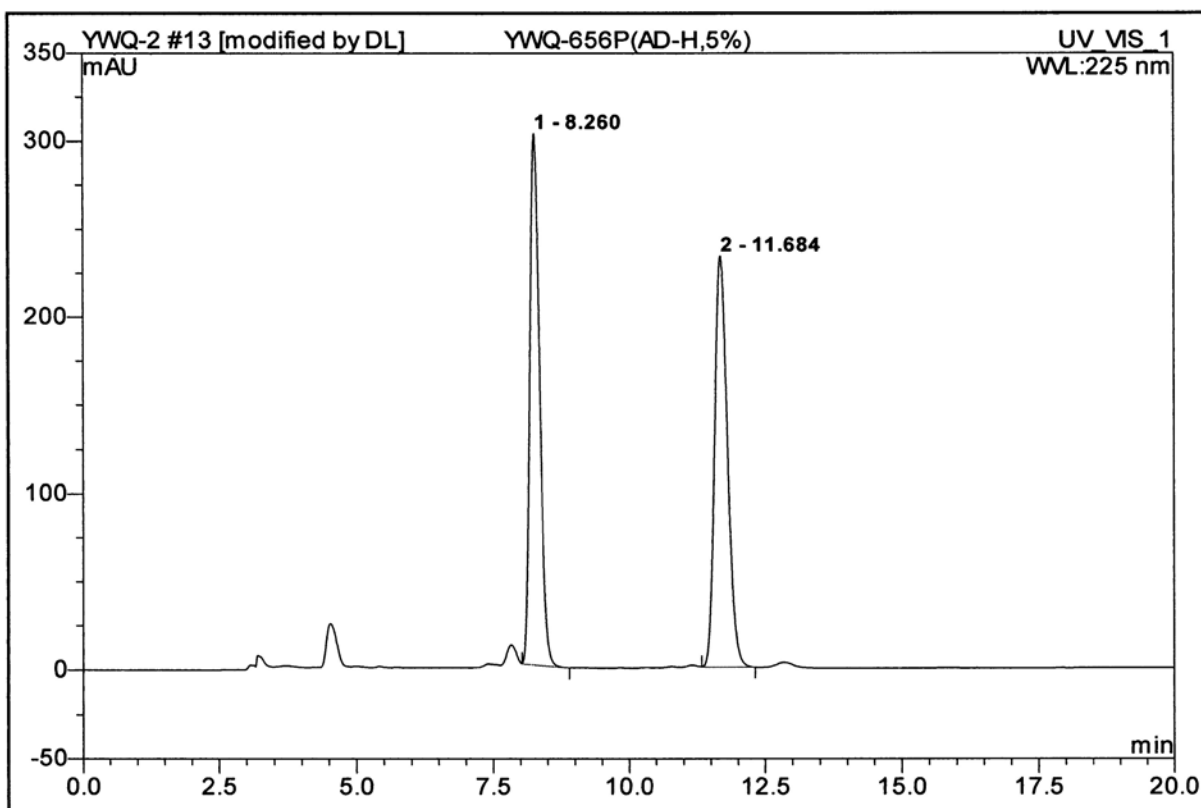
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	10.24	n.a.	1062.272	323.706	97.12	n.a.	BMB*
2	12.01	n.a.	29.029	9.593	2.88	n.a.	BMB*
Total:			1091.302	333.299	100.00	0.000	



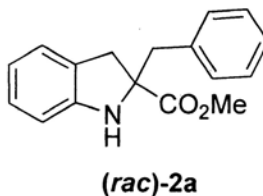
13 YWQ-656P(AD-H,5%)

Sample Name: YWQ-656P(AD-H,5%)
Vial Number: 11
Sample Type: unknown
Control Program: pql20091111
Quantif. Method: pql20091111
Recording Time: 3:32 PM
Run Time (min): 20.00

Injection Volume: 10.0
Channel: UV_VIS_1
Wavelength: 225
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



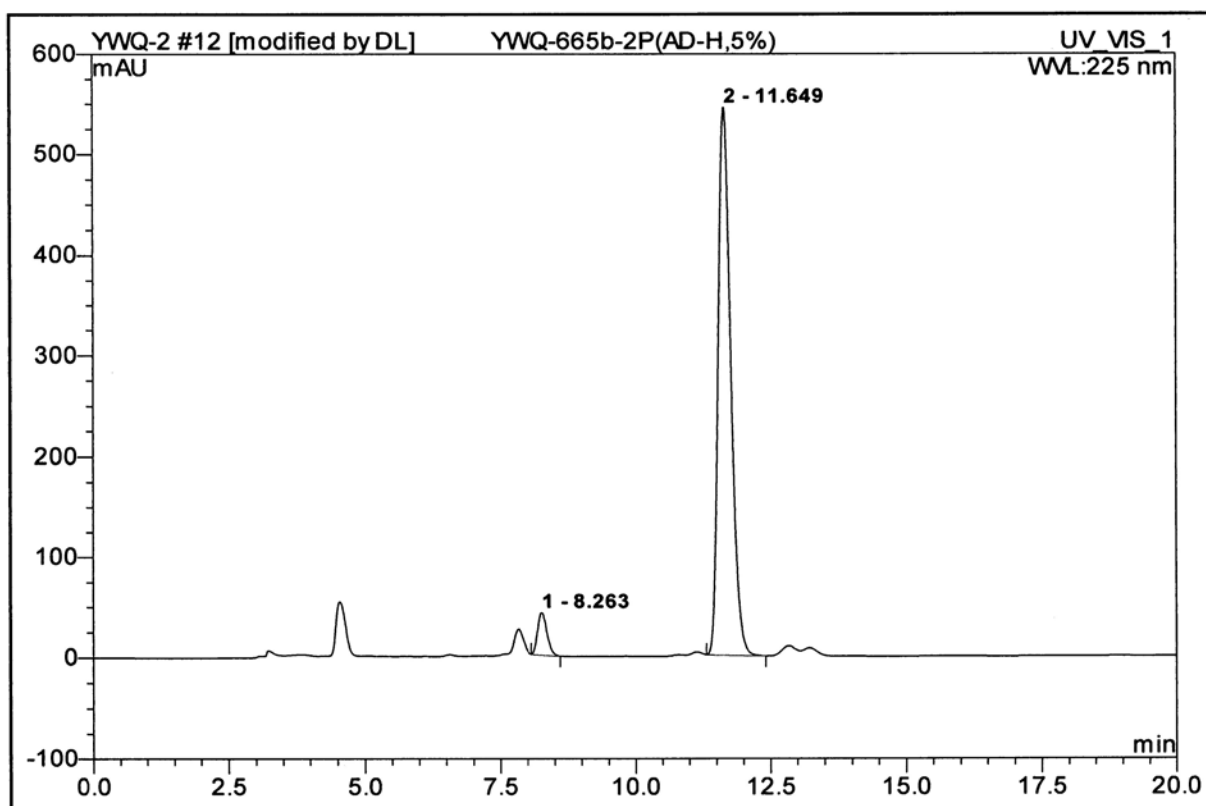
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	8.26	n.a.	300.982	62.654	49.74	n.a.	BMB*
2	11.68	n.a.	232.835	63.315	50.26	n.a.	BMB*
Total:			533.817	125.969	100.00	0.000	



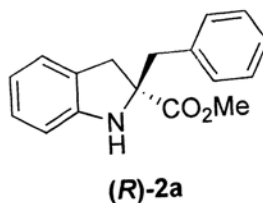
12 YWQ-665b-2P(AD-H,5%)

Sample Name: YWQ-665b-2P(AD-H,5%)
Vial Number: 10
Sample Type: unknown
Control Program: pql20091111
Quantif. Method: pql20091111
Recording Time: 2:57 PM
Run Time (min): 20.00

Injection Volume: 10.0
Channel: UV_VIS_1
Wavelength: 225
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



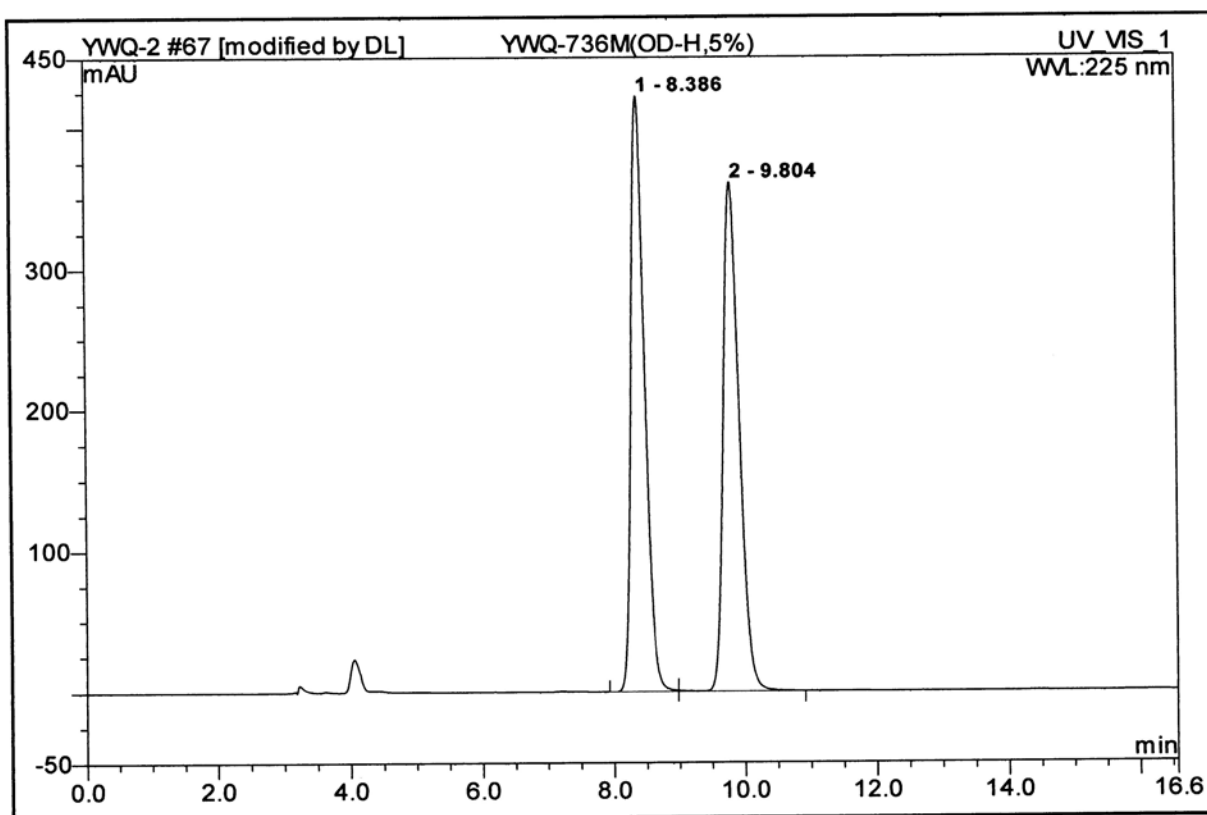
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	8.26	n.a.	41.792	8.288	5.36	n.a.	BMB*
2	11.65	n.a.	543.824	146.453	94.64	n.a.	BMB*
Total:			585.615	154.741	100.00	0.000	



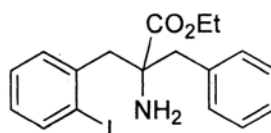
67 YWQ-736M(OD-H,5%)

Sample Name: YWQ-736M(OD-H,5%)
Vial Number: 59
Sample Type: unknown
Control Program: pql20091111
Quantif. Method: pql20091111
Recording Time: 1:38 PM
Run Time (min): 16.57

Injection Volume: 10.0
Channel: UV_VIS_1
Wavelength: 225
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



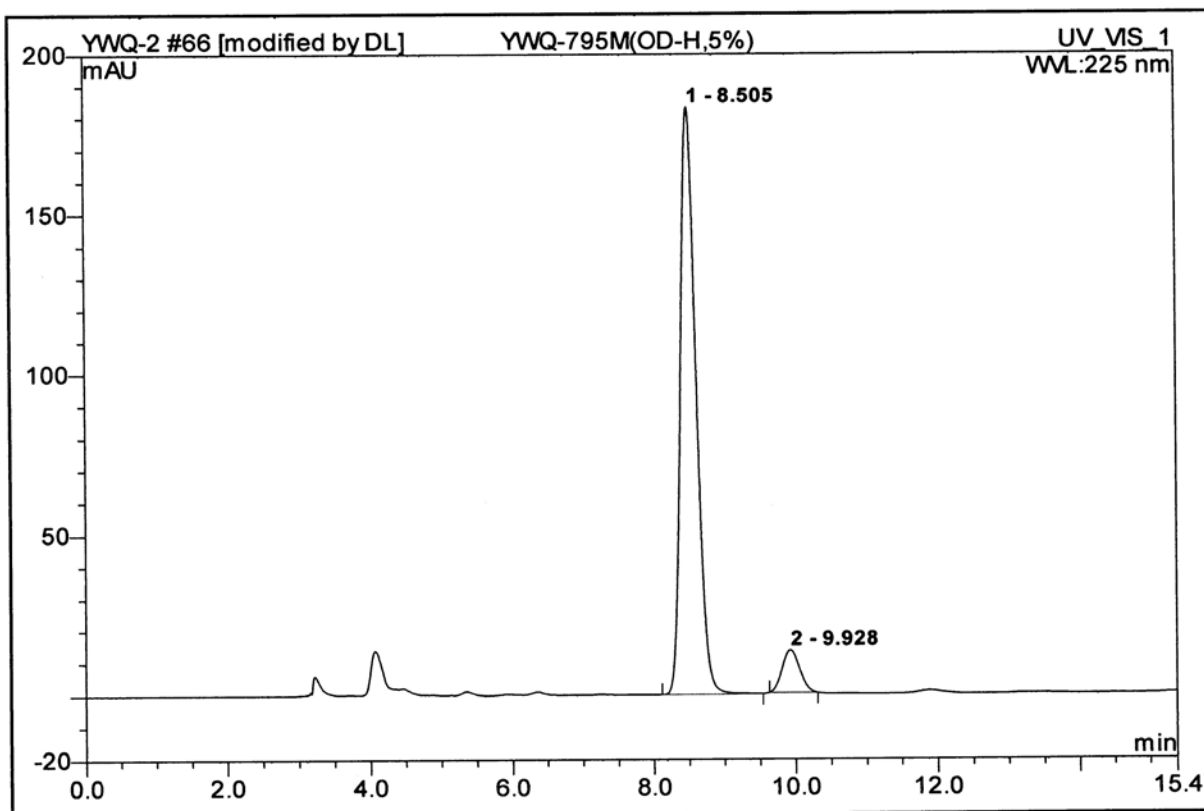
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	8.39	n.a.	421.918	101.238	50.00	n.a.	BM *
2	9.80	n.a.	360.072	101.253	50.00	n.a.	MB*
Total:			781.990	202.491	100.00	0.000	

**(rac)-1b**

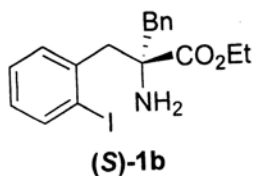
66 YWQ-795M(OD-H,5%)

Sample Name: YWQ-795M(OD-H,5%)
Vial Number: 58
Sample Type: unknown
Control Program: pql20091111
Quantif. Method: pql20091111
Recording Time: 1:20 PM
Run Time (min): 15.38

Injection Volume: 10.0
Channel: UV_VIS_1
Wavelength: 225
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



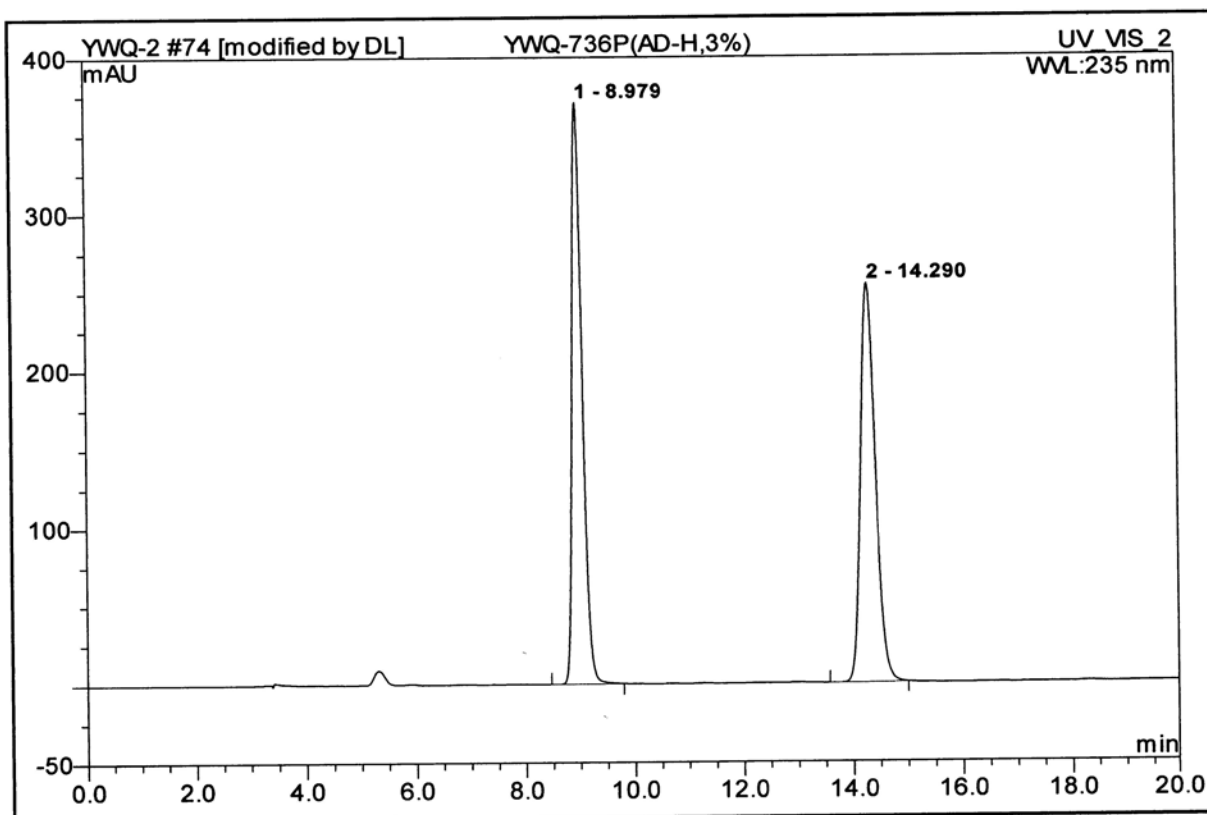
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	8.50	n.a.	182.977	46.415	92.61	n.a.	BMB*
2	9.93	n.a.	13.133	3.706	7.39	n.a.	BMB*
Total:			196.110	50.121	100.00	0.000	



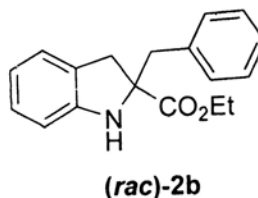
74 YWQ-736P(AD-H,3%)

Sample Name: YWQ-736P(AD-H,3%)
Vial Number: 66
Sample Type: unknown
Control Program: pql20091111
Quantif. Method: pql20091111
Recording Time: 4:58 PM
Run Time (min): 19.96

Injection Volume: 10.0
Channel: UV_VIS_2
Wavelength: 235
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



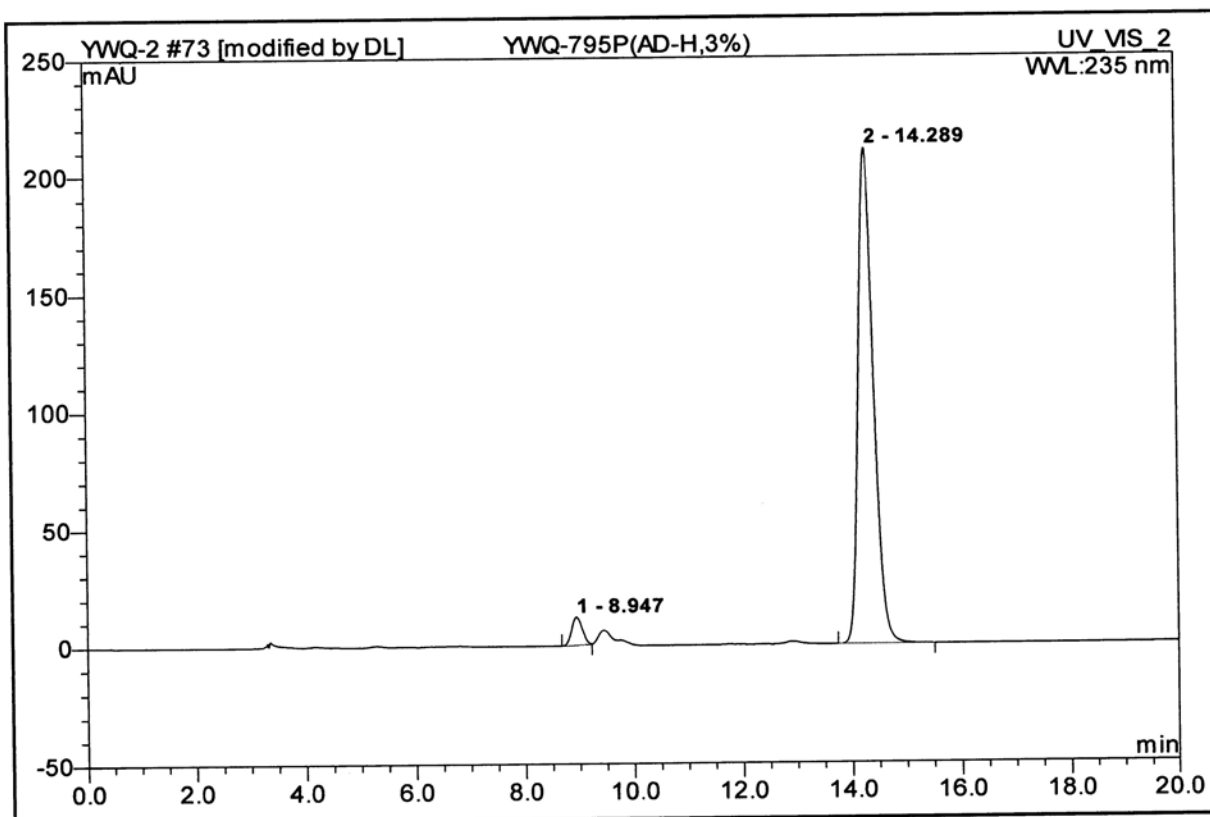
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	8.98	n.a.	370.251	79.614	50.00	n.a.	BMB*
2	14.29	n.a.	254.237	79.626	50.00	n.a.	BMB*
Total:			624.488	159.241	100.00	0.000	



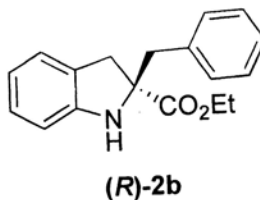
73 YWQ-795P(AD-H,3%)

Sample Name: YWQ-795P(AD-H,3%)
Vial Number: 65
Sample Type: unknown
Control Program: pql20091111
Quantif. Method: pql20091111
Recording Time: 4:27 PM
Run Time (min): 19.98

Injection Volume: 10.0
Channel: UV_VIS_2
Wavelength: 235
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



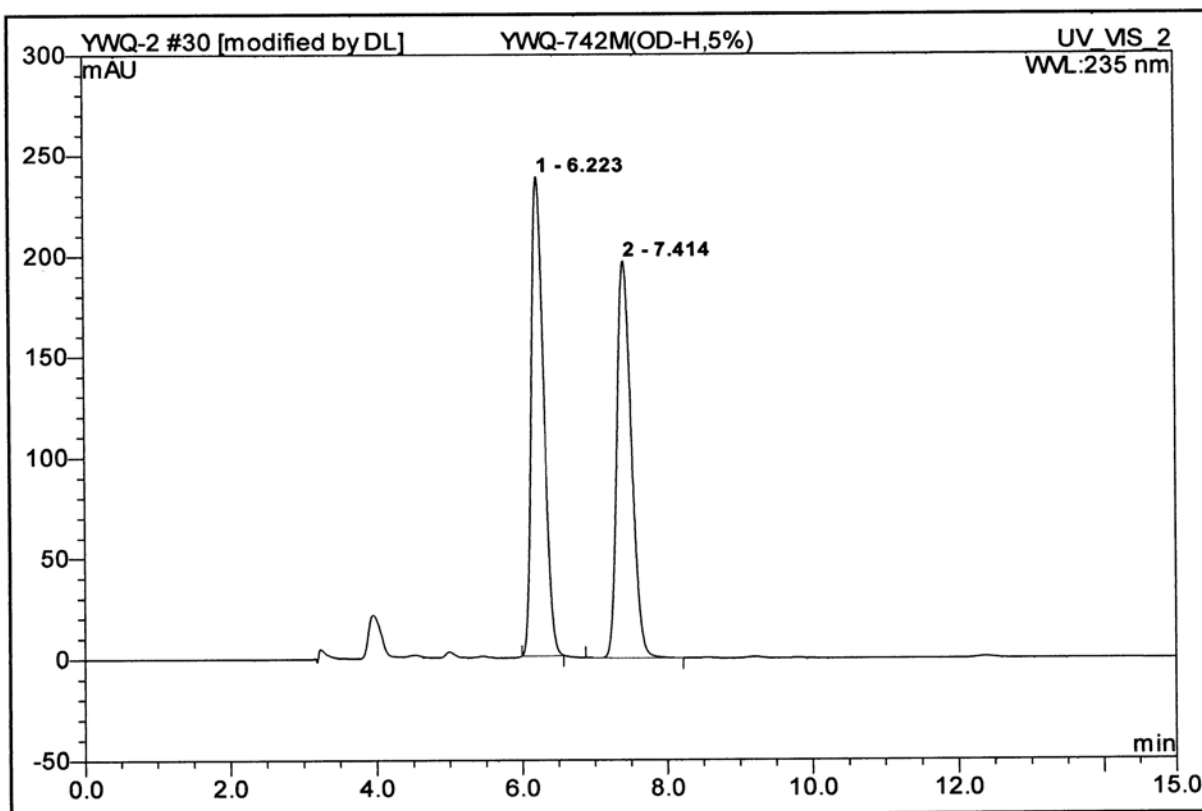
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	8.95	n.a.	11.593	2.566	3.59	n.a.	BMB*
2	14.29	n.a.	210.413	68.837	96.41	n.a.	BMB
Total:			222.006	71.403	100.00	0.000	



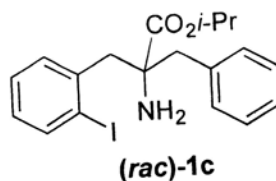
30 YWQ-742M(OD-H,5%)

Sample Name: YWQ-742M(OD-H,5%)
Vial Number: 25
Sample Type: unknown
Control Program: pql20091111
Quantif. Method: pql20091111
Recording Time: 6:23 PM
Run Time (min): 15.00

Injection Volume: 10.0
Channel: UV_VIS_2
Wavelength: 235
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



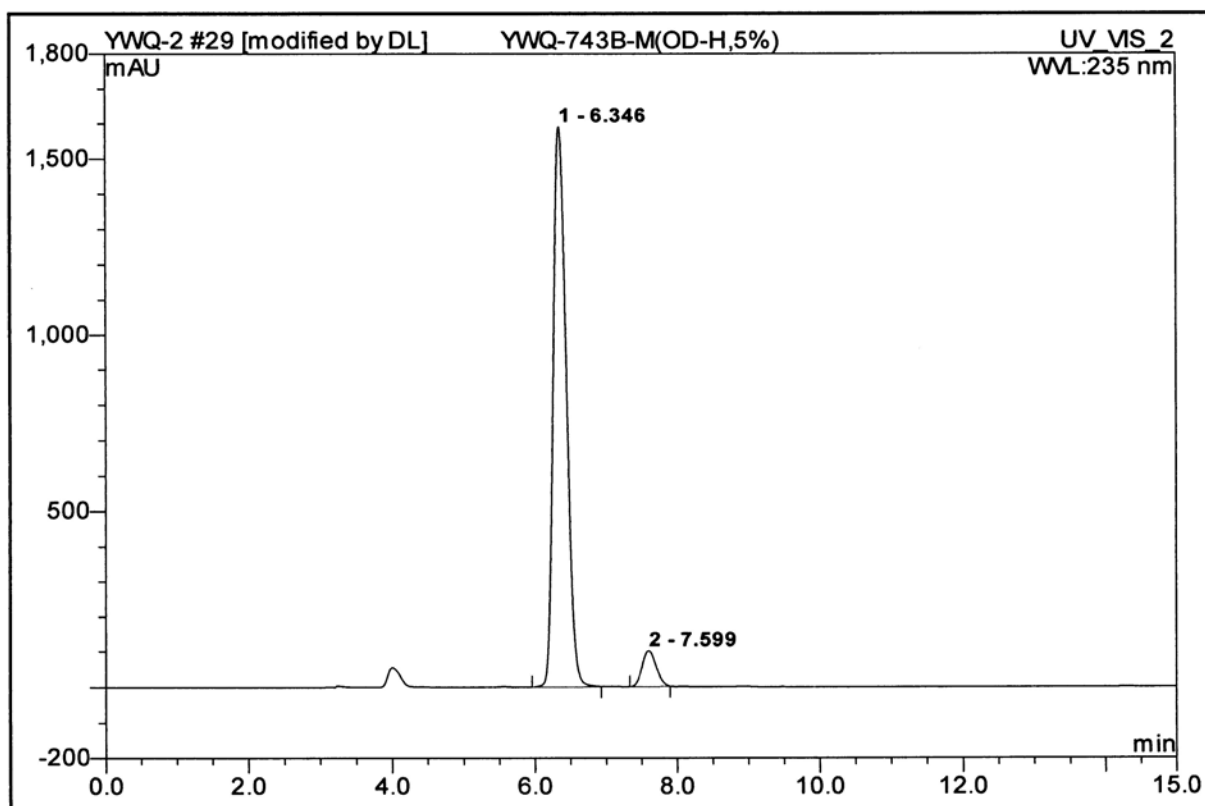
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	6.22	n.a.	237.389	47.153	50.92	n.a.	BMB*
2	7.41	n.a.	196.820	45.446	49.08	n.a.	BMB*
Total:			434.209	92.599	100.00	0.000	



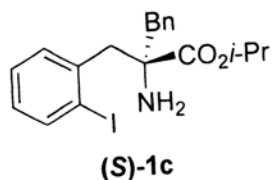
29 YWQ-743B-M(OD-H,5%)

Sample Name: YWQ-743B-M(OD-H,5%)
Vial Number: 24
Sample Type: unknown
Control Program: pql20091111
Quantif. Method: pql20091111
Recording Time: 5:43 PM
Run Time (min): 15.00

Injection Volume: 10.0
Channel: UV_VIS_2
Wavelength: 235
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



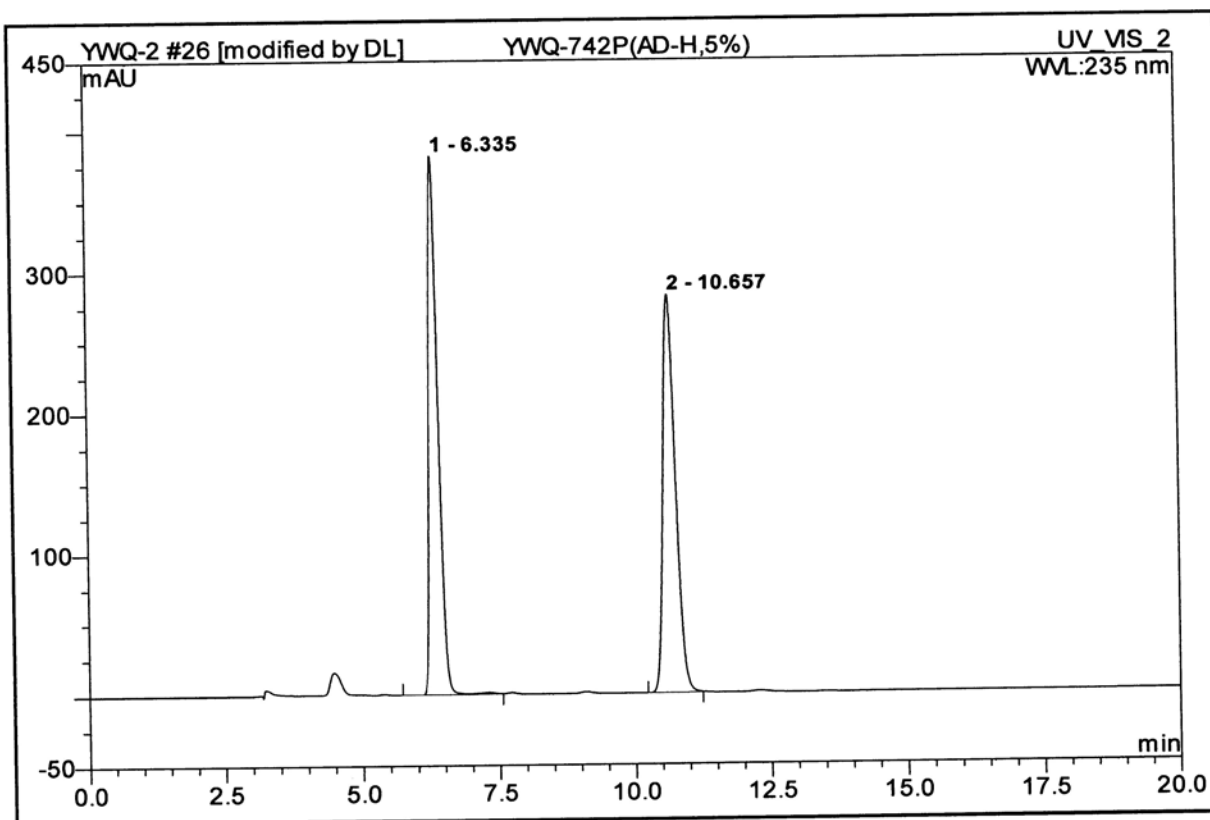
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	6.35	n.a.	1589.871	337.426	93.62	n.a.	BMB*
2	7.60	n.a.	100.106	22.993	6.38	n.a.	BMB*
Total:			1689.977	360.419	100.00	0.000	



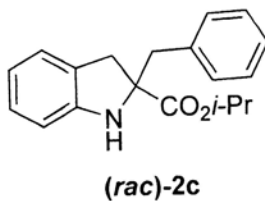
26 YWQ-742P(AD-H,5%)

Sample Name: YWQ-742P(AD-H,5%)
Vial Number: 21
Sample Type: unknown
Control Program: pql20091111
Quantif. Method: pql20091111
Recording Time: 4:40 PM
Run Time (min): 20.00

Injection Volume: 10.0
Channel: UV_VIS_2
Wavelength: 235
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



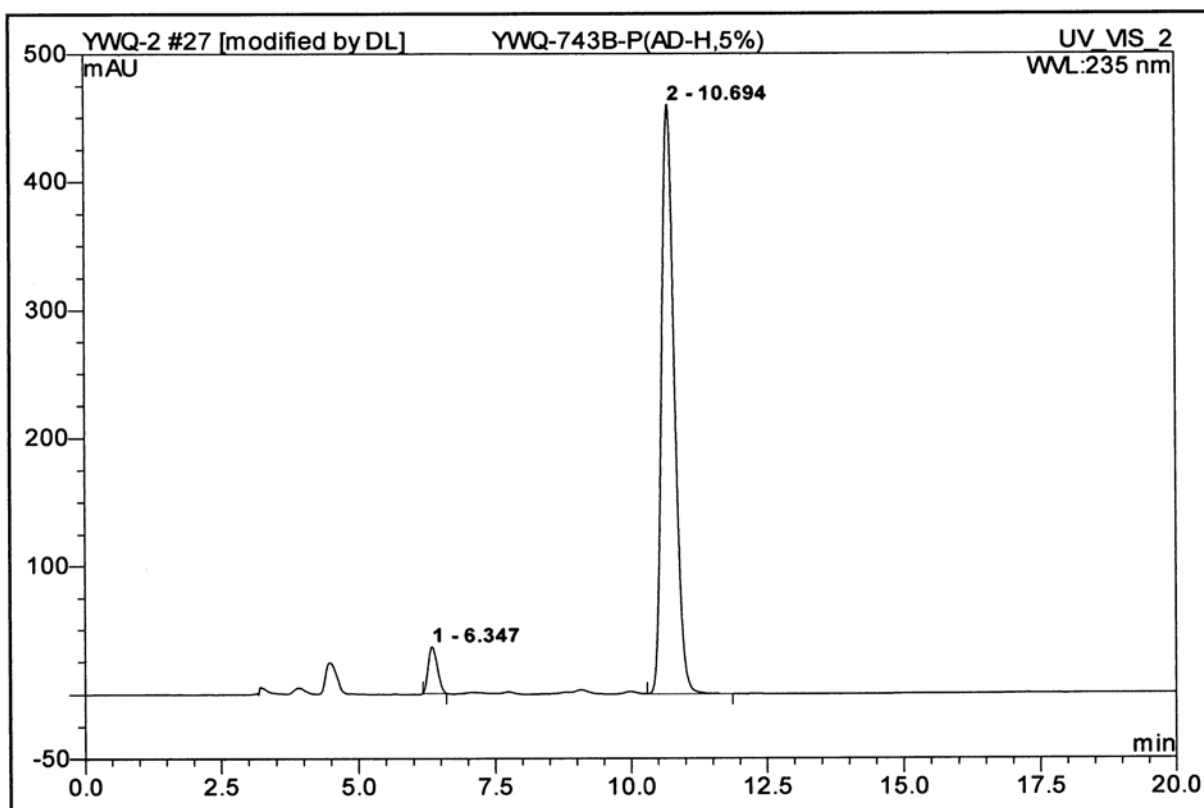
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	6.34	n.a.	381.893	75.061	50.00	n.a.	BMB*
2	10.66	n.a.	282.238	75.065	50.00	n.a.	BMB*
Total:			664.131	150.126	100.00	0.000	



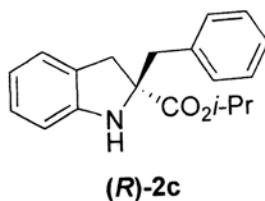
27 YWQ-743B-P(AD-H,5%)

Sample Name: YWQ-743B-P(AD-H,5%)
Vial Number: 22
Sample Type: unknown
Control Program: pql20091111
Quantif. Method: pql20091111
Recording Time: 4:03 PM
Run Time (min): 20.00

Injection Volume: 10.0
Channel: UV_VIS_2
Wavelength: 235
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	6.35	n.a.	35.595	6.824	5.15	n.a.	BMB*
2	10.69	n.a.	459.598	125.594	94.85	n.a.	BMB*
Total:			495.193	132.418	100.00	0.000	

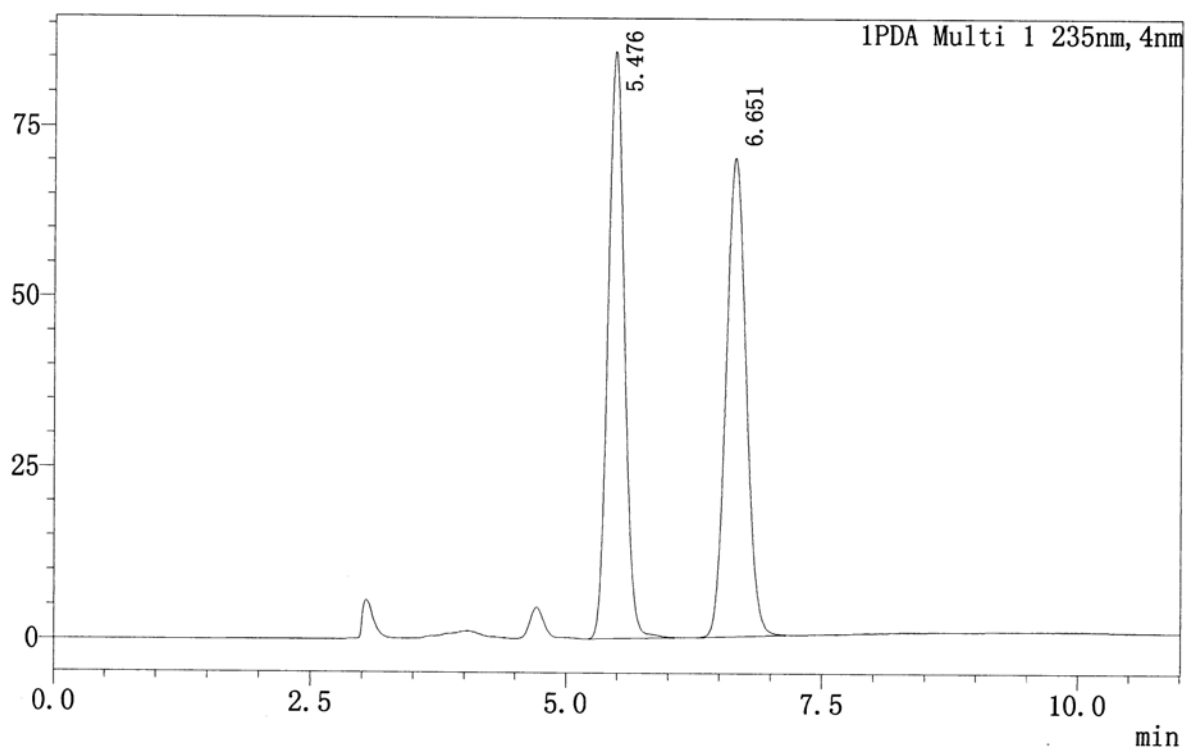


Data Report

Sample Information

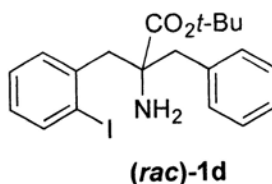
Sample Name : 35624MRSOD-H,5%
 Tray# : 1
 Vial# : 77
 Injection Volume : 7
 Data File : YWQ-35624MRS(OD-H,5%).lcd
 Method File : 5%60min.lcm
 Report Format File : DEFAULT.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013-2-23 14:05:31
 Date Processed : 2013-2-25 13:39:19

mAU



PDA Ch1 235nm

NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	5.476	85865	957316	50.174	--
2	6.651	69983	950687	49.826	3.494

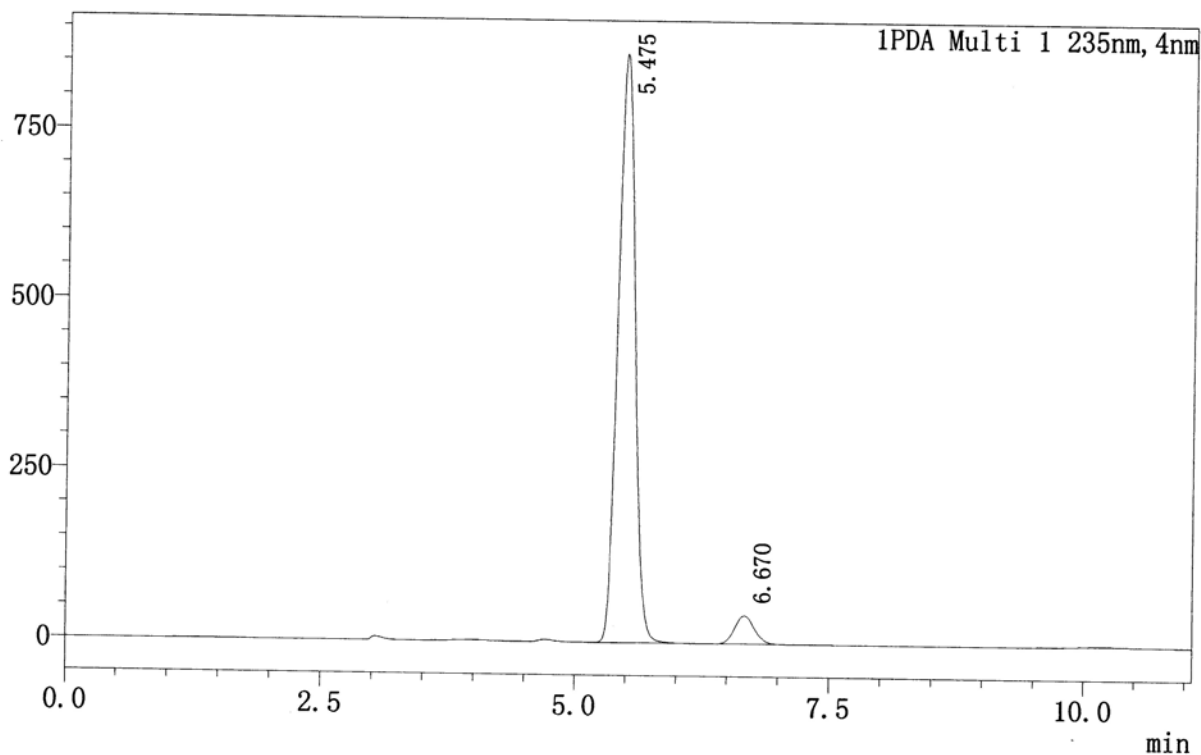


Data Report

Sample Information

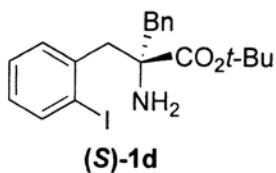
Sample Name : 35624MOD-H,5%
 Tray# : 1
 Vial# : 95
 Injection Volume : 7
 Data File : YWQ-35624M(OD-H,5%).lcd
 Method File : 5%60min.lcm
 Report Format File : DEFAULT.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013-2-23 13:43:20
 Date Processed : 2013-2-25 13:43:28

mAU



PDA Ch1 235nm

NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	5.475	866373	10122266	94.824	--
2	6.670	41549	552529	5.176	3.500

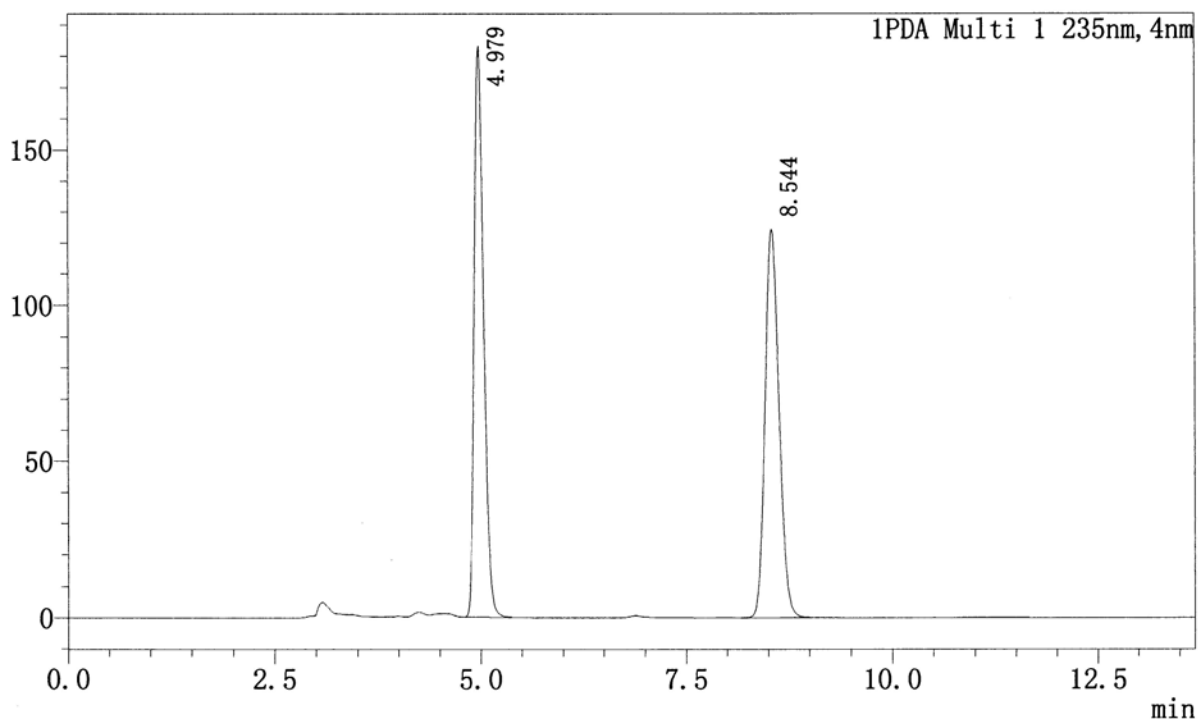


Data Report

Sample Information

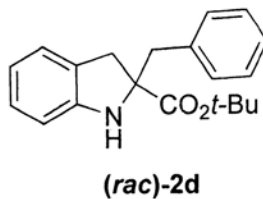
Sample Name : 35624PRSAD-H,5%
 Tray# : 1
 Vial# : 76
 Injection Volume : 8
 Data File : YWQ-35624PRS(AD-H,5%).lcd
 Method File : 5%60min.lcm
 Report Format File : DEFAULT.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013-2-23 17:21:53
 Date Processed : 2013-2-25 13:31:15

mAU



PDA Ch1 235nm

NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	4.979	183122	1464507	50.000	--
2	8.544	124484	1464488	50.000	13.046

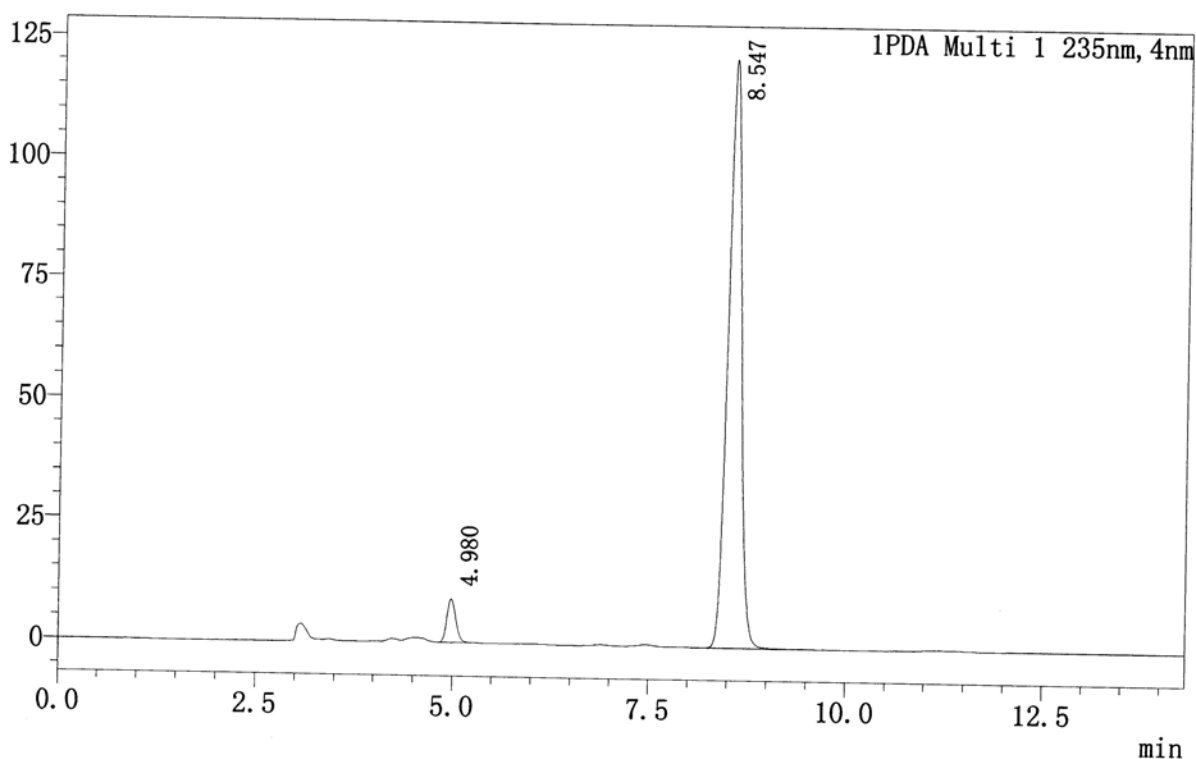


Data Report

Sample Information

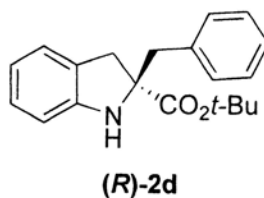
Sample Name : 35624PAD-H,5%
 Tray# : 1
 Vial# : 94
 Injection Volume : 8
 Data File : YWQ-35624P(AD-H,5%).lcd
 Method File : 5%60min.lcm
 Report Format File : DEFAULT.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013-2-23 15:59:09
 Date Processed : 2013-2-25 13:35:39

mAU



PDA Ch1 235nm

NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	4.980	9012	70561	4.694	---
2	8.547	121818	1432686	95.306	13.115

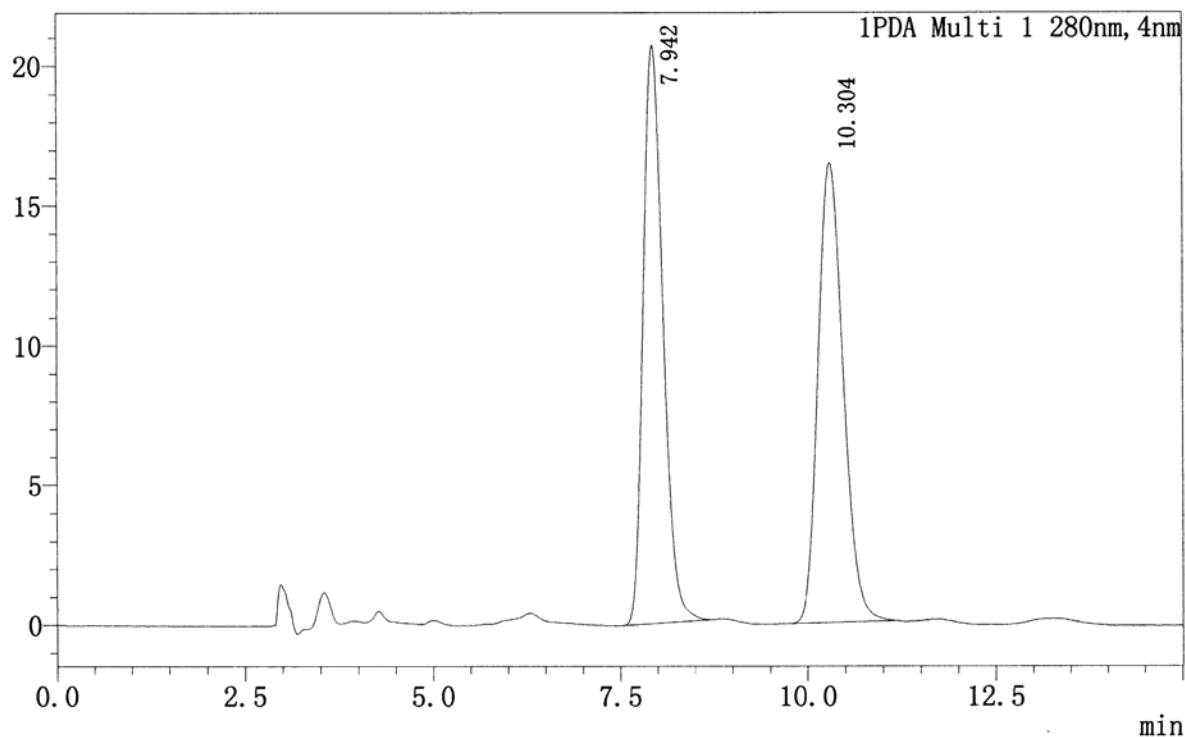


Data Report

Sample Information

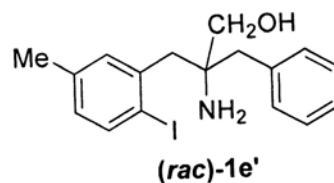
Sample Name : 623-MRSOD-H,8%+Base
 Tray# : 1
 Vial# : 1
 Injection Volume : 10
 Data File : 35623-MRS(OD-H,8%).lcd
 Method File : 8%15min.lcm
 Report Format File : Templates.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013-1-28 14:39:18
 Date Processed : 2013-3-29 21:12:25

mAU



PDA Ch1 280nm

NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	7.942	20674	381461	49.940	--
2	10.304	16447	382383	50.060	4.273

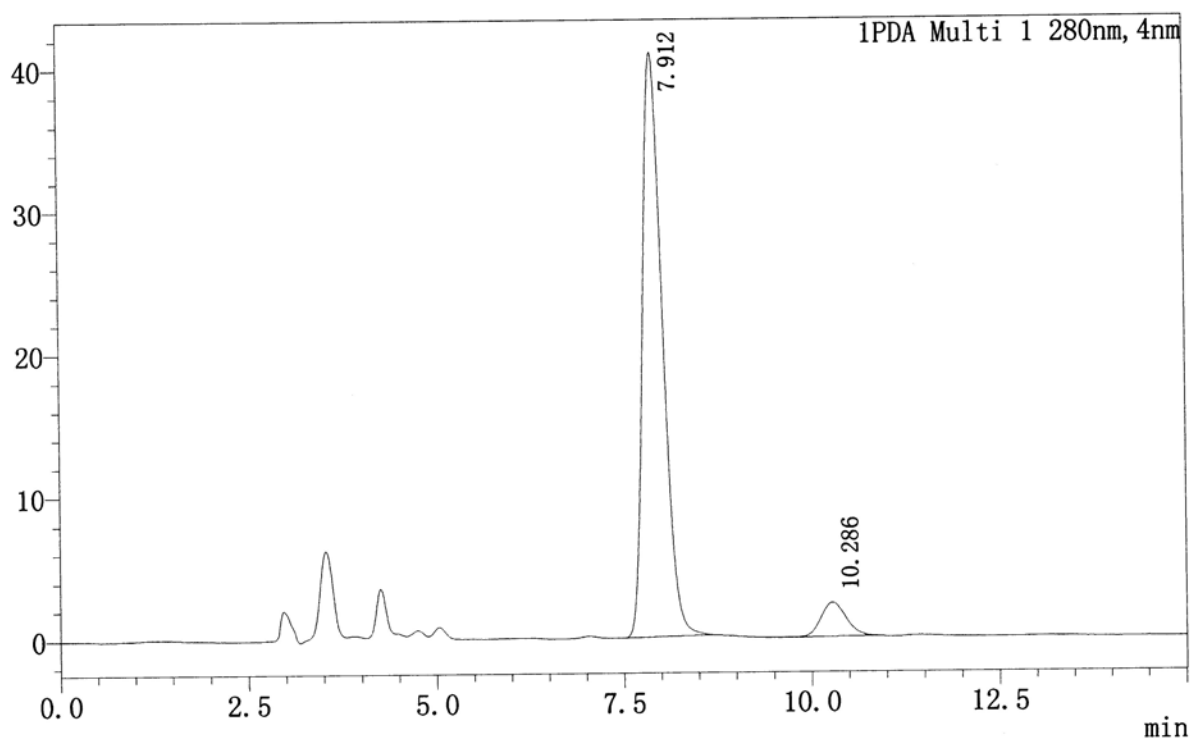


Data Report

Sample Information

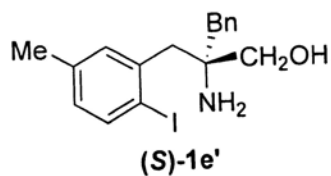
Sample Name : 623-MRS4OD-H,8%+Base
 Tray# : 1
 Vial# : 2
 Injection Volume : 10
 Data File : 35623-M(OD-H,8%).lcd
 Method File : 8%15min.lcm
 Report Format File : Templates.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013-1-28 14:56:30
 Date Processed : 2013-3-29 21:21:20

mAU



PDA Ch1 280nm

NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	7.912	40980	753919	93.135	--
2	10.286	2399	55573	6.865	4.288

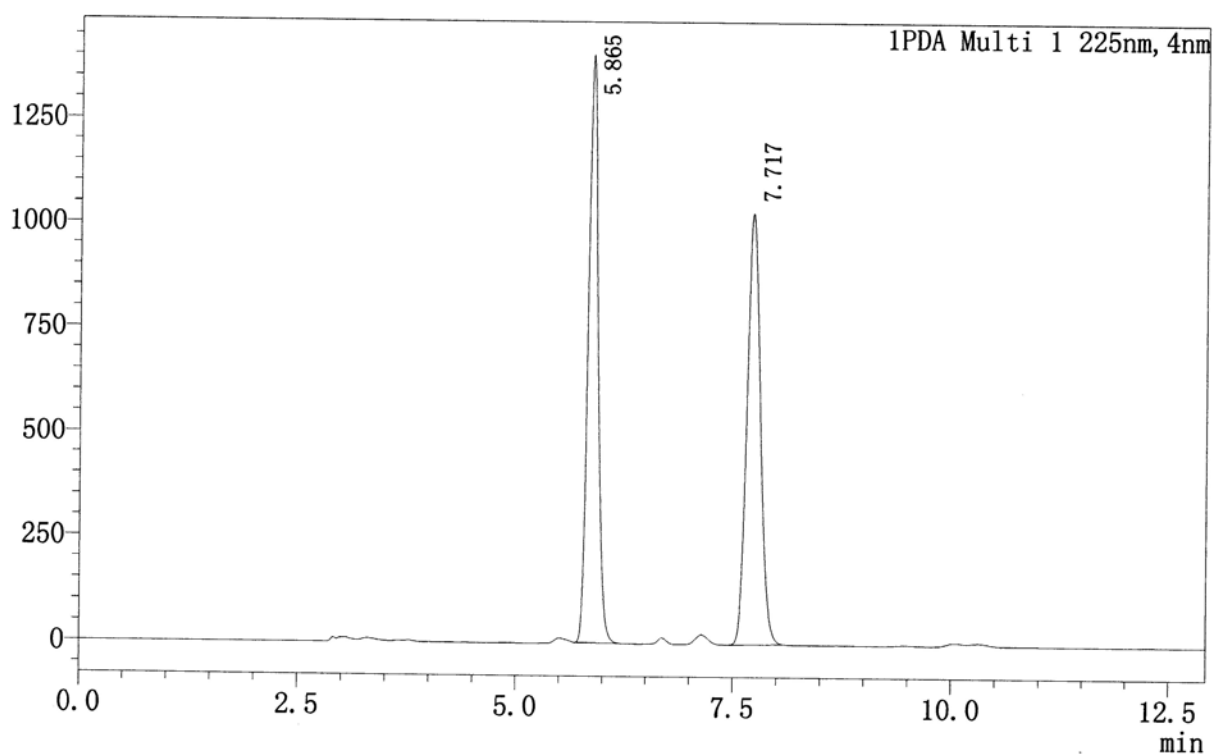


Data Report

Sample Information

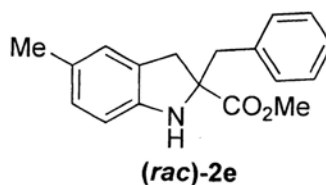
Sample Name : 701P
 Tray# : 1
 Vial# : 61
 Injection Volume : 7
 Data File : 701P2(AD-H,10%).lcd
 Method File : 10%50min.lcm
 Report Format File : DEFAULT.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013-2-26 21:01:42
 Date Processed : 2013-3-5 18:49:01

mAU



PDA Ch1 225nm

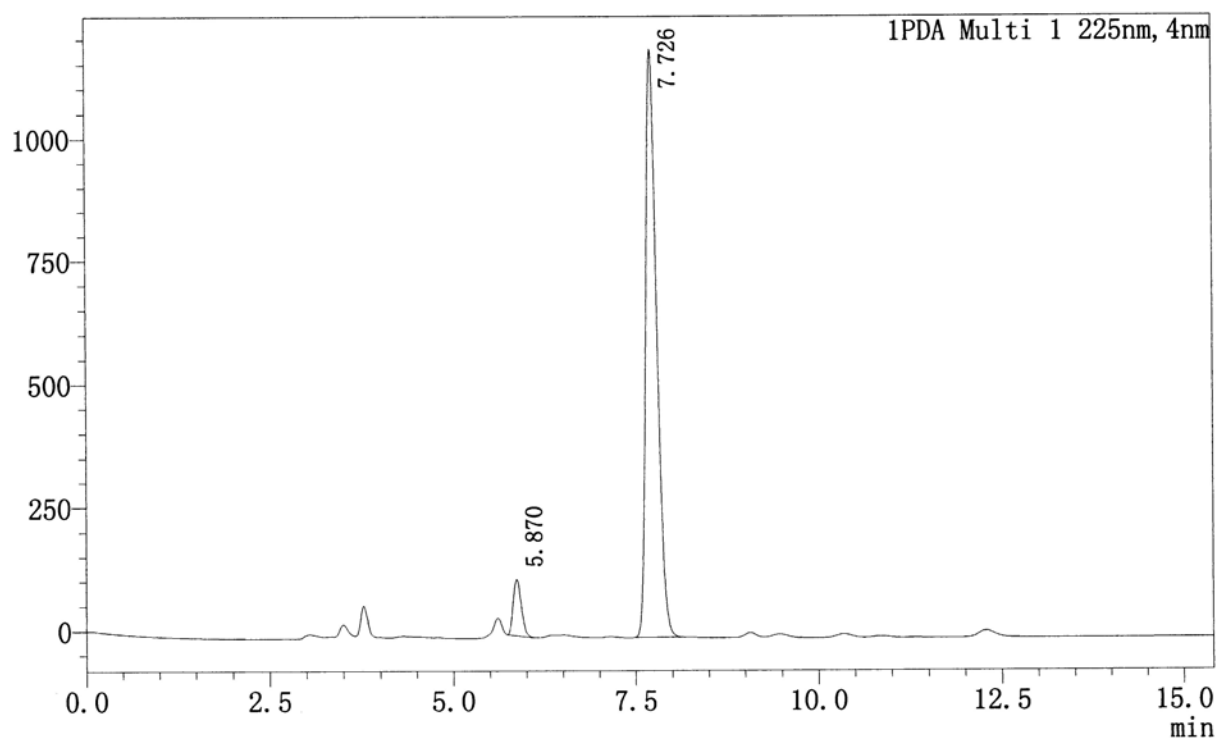
NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	5.865	1404114	11118011	50.144	--
2	7.717	1028578	11054144	49.856	7.107



Data Report

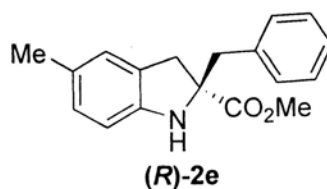
Sample Information
 Sample Name : 726B-P
 Tray# : 1
 Vial# : 15
 Injection Volume : 7
 Data File : 726B-P1(AD-H,10%).lcd
 Method File : YWQ2013.lcm
 Report Format File : DEFAULT.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013-2-25 15:37:58
 Date Processed : 2013-3-29 21:08:55

mAU



PDA Ch1 225nm

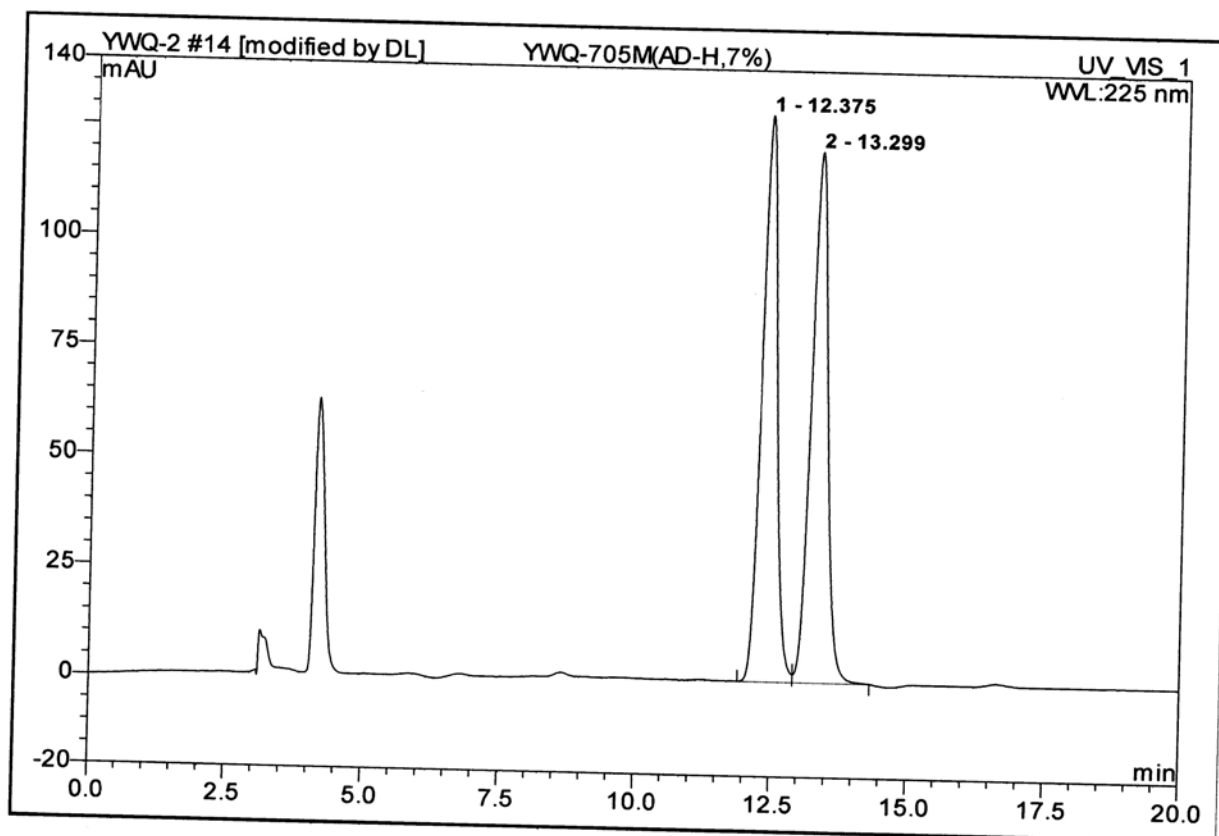
NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	5.870	114555	883456	6.608	--
2	7.726	1194458	12486060	93.392	7.289



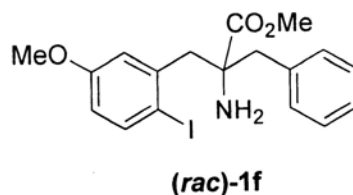
14 YWQ-705M(AD-H,7%)

Sample Name: YWQ-705M(AD-H,7%)
Vial Number: 11
Sample Type: unknown
Control Program: pql20091111
Quantif. Method: pql20091111
Recording Time: 10:28 AM
Run Time (min): 20.00

Injection Volume: 10.0
Channel: UV_VIS_1
Wavelength: 225
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



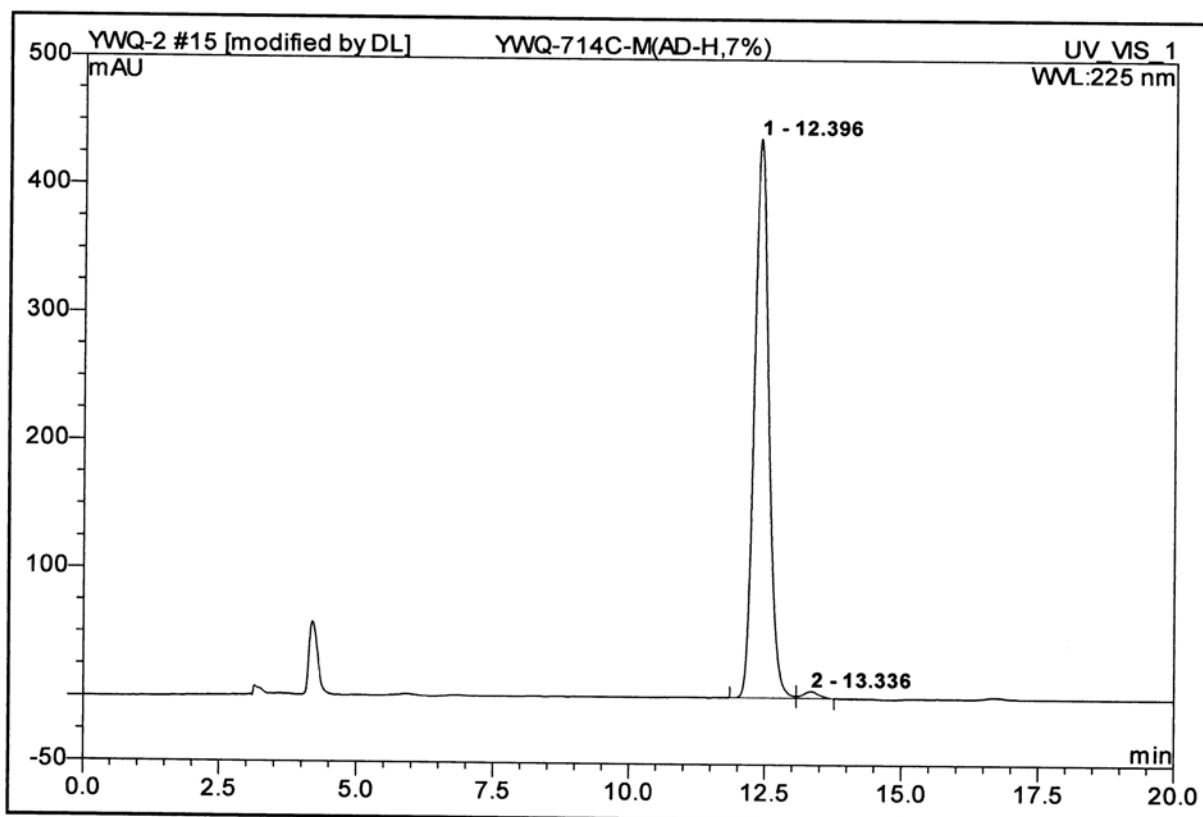
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	12.38	n.a.	128.395	41.813	50.00	n.a.	BM *
2	13.30	n.a.	120.316	41.819	50.00	n.a.	MB*
Total:			248.711	83.631	100.00	0.000	



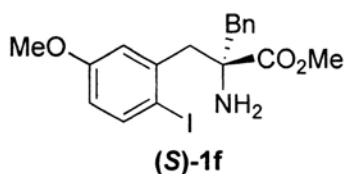
15 YWQ-714C-M(AD-H,7%)

Sample Name: YWQ-714C-M(AD-H,7%)
Vial Number: 12
Sample Type: unknown
Control Program: pql20091111
Quantif. Method: pql20091111
Recording Time: 11:01 AM
Run Time (min): 20.00

Injection Volume: 10.0
Channel: UV_VIS_1
Wavelength: 225
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



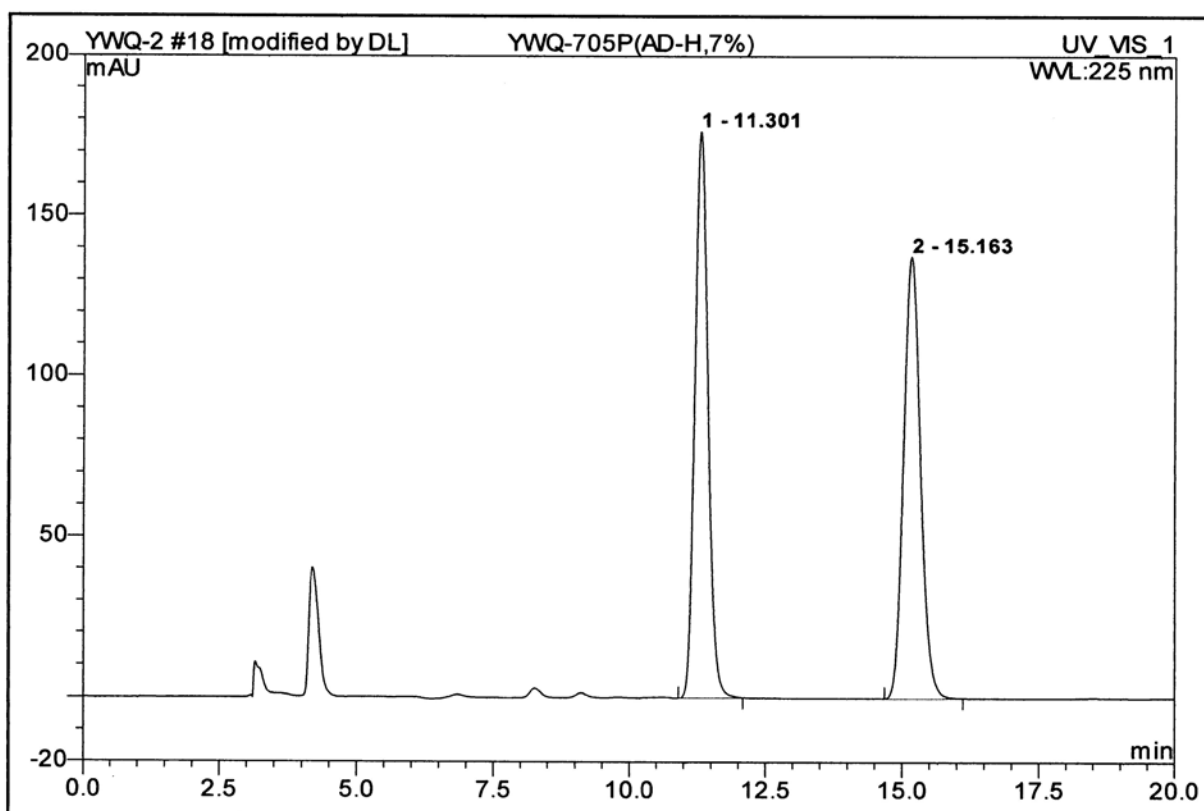
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	12.40	n.a.	435.940	135.200	98.75	n.a.	BM *
2	13.34	n.a.	5.108	1.717	1.25	n.a.	MB*
Total:			441.048	136.917	100.00	0.000	



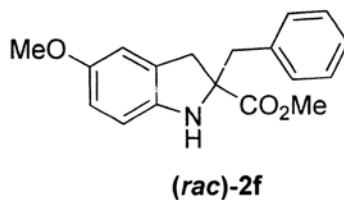
18 YWQ-705P(AD-H,7%)

Sample Name: **YWQ-705P(AD-H,7%)**
Vial Number: **12**
Sample Type: **unknown**
Control Program: **pql20091111**
Quantif. Method: **pql20091111**
Recording Time: **12:38 PM**
Run Time (min): **20.00**

Injection Volume: **10.0**
Channel: **UV_VIS_1**
Wavelength: **225**
Bandwidth: **1**
Dilution Factor: **1.0000**
Sample Weight: **1.0000**
Sample Amount: **1.0000**



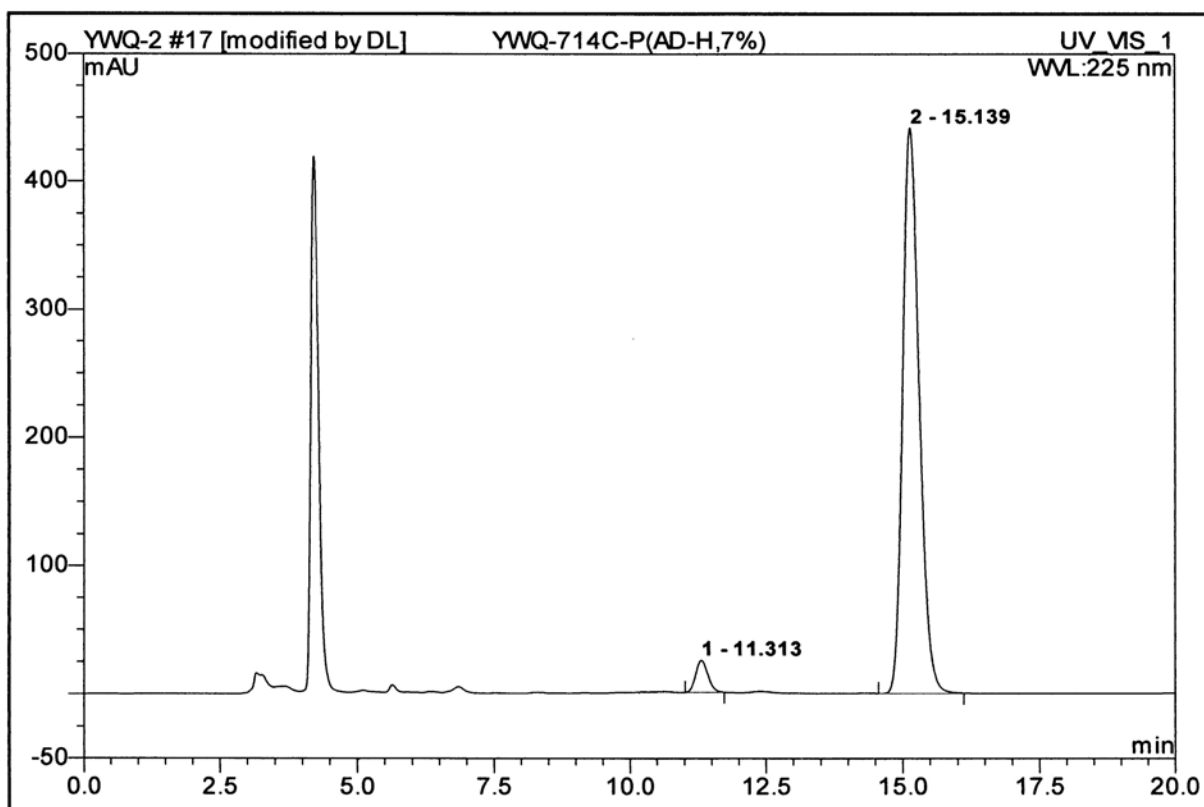
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	11.30	n.a.	176.284	49.352	50.00	n.a.	BMB*
2	15.16	n.a.	137.544	49.342	50.00	n.a.	BMB*
Total:			313.827	98.694	100.00	0.000	



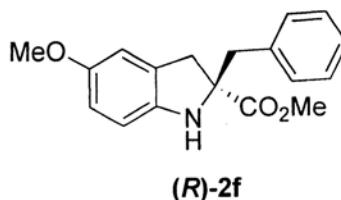
17 YWQ-714C-P(AD-H,7%)

Sample Name: YWQ-714C-P(AD-H,7%)
Vial Number: 11
Sample Type: unknown
Control Program: pql20091111
Quantif. Method: pql20091111
Recording Time: 12:06 PM
Run Time (min): 20.00

Injection Volume: 10.0
Channel: UV_VIS_1
Wavelength: 225
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



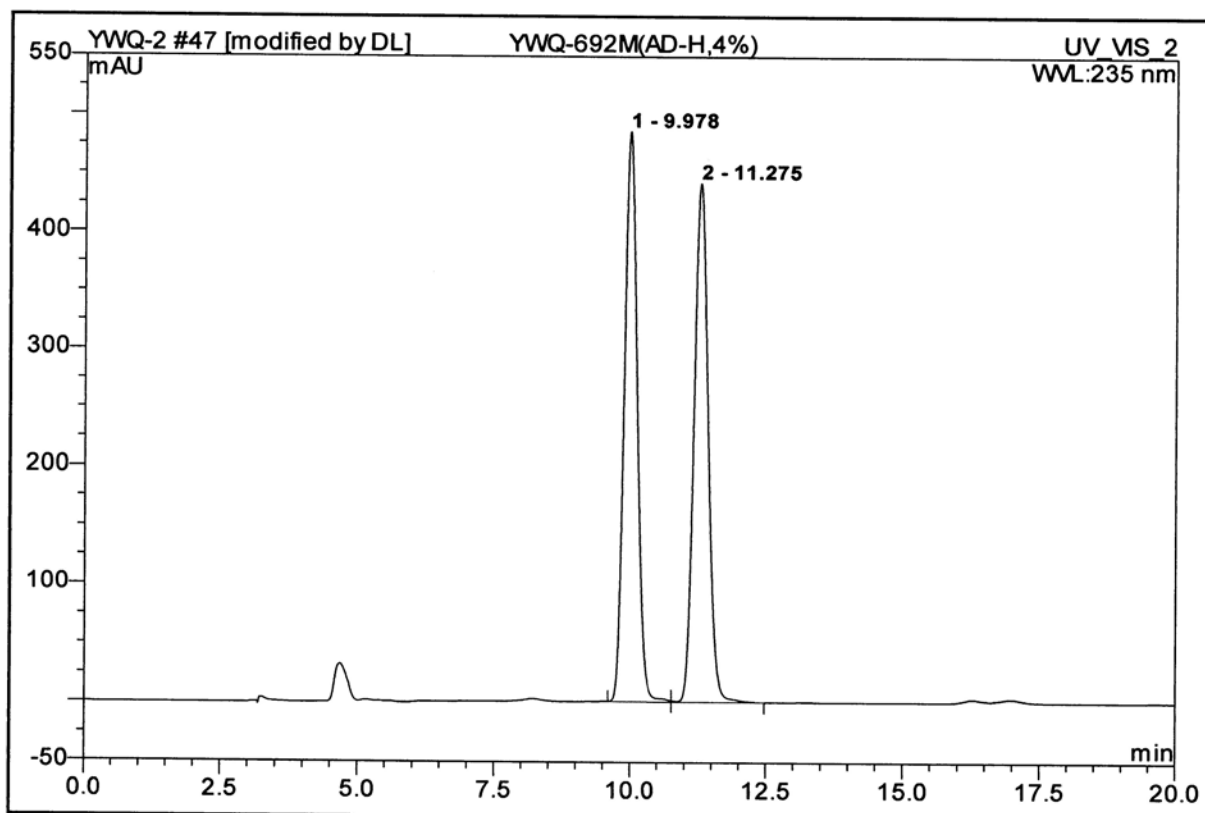
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	11.31	n.a.	24.812	6.402	3.99	n.a.	BMB*
2	15.14	n.a.	440.998	153.955	96.01	n.a.	BMB*
Total:			465.810	160.356	100.00	0.000	



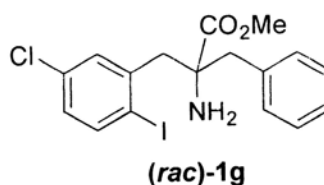
47 YWQ-692M(AD-H,4%)

Sample Name: YWQ-692M(AD-H,4%)
Vial Number: 41
Sample Type: unknown
Control Program: pqI20091111
Quantif. Method: pqI20091111
Recording Time: 9:03 PM
Run Time (min): 20.00

Injection Volume: 10.0
Channel: UV_VIS_2
Wavelength: 235
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



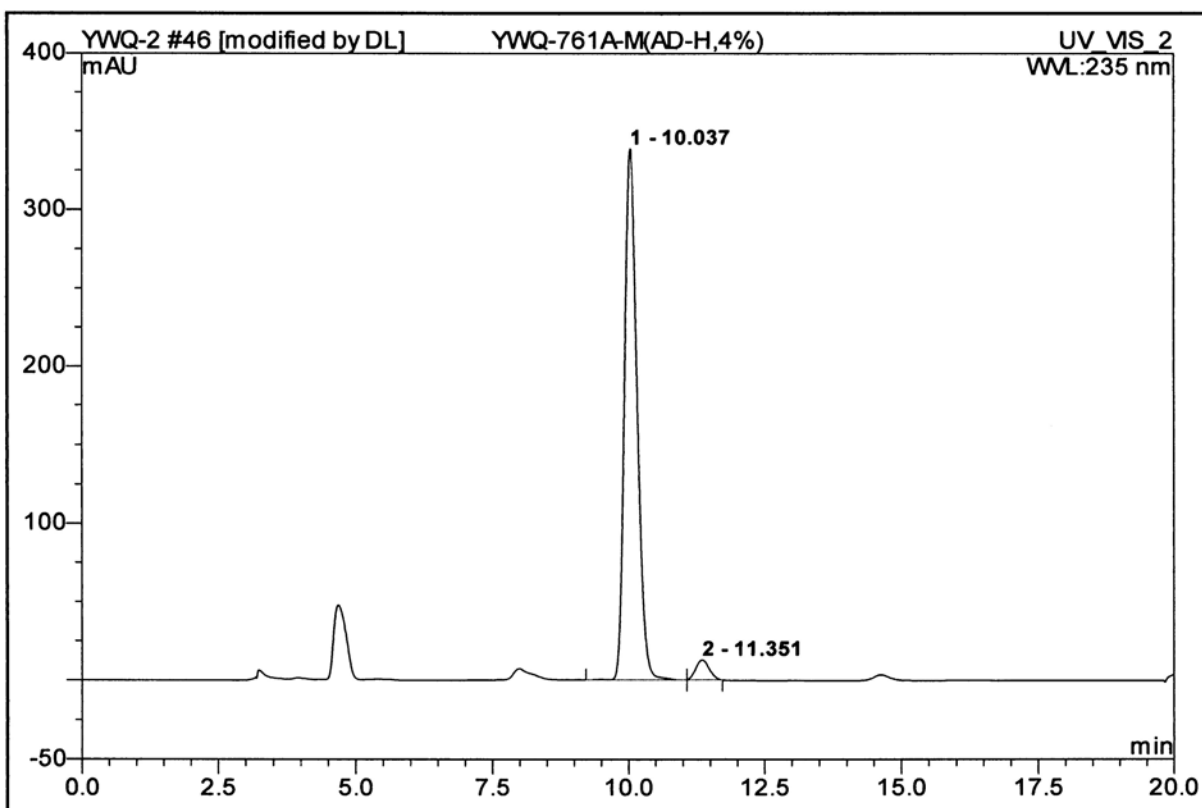
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	9.98	n.a.	484.343	133.303	50.18	n.a.	BM *
2	11.27	n.a.	440.710	132.332	49.82	n.a.	MB*
Total:			925.053	265.635	100.00	0.000	



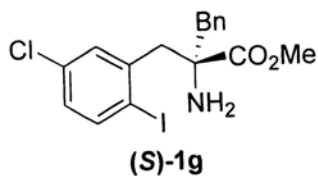
46 YWQ-761A-M(AD-H,4%)

Sample Name: YWQ-761A-M(AD-H,4%)
Vial Number: 40
Sample Type: unknown
Control Program: pql20091111
Quantif. Method: pql20091111
Recording Time: 8:36 PM
Run Time (min): 20.00

Injection Volume: 10.0
Channel: UV_VIS_2
Wavelength: 235
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



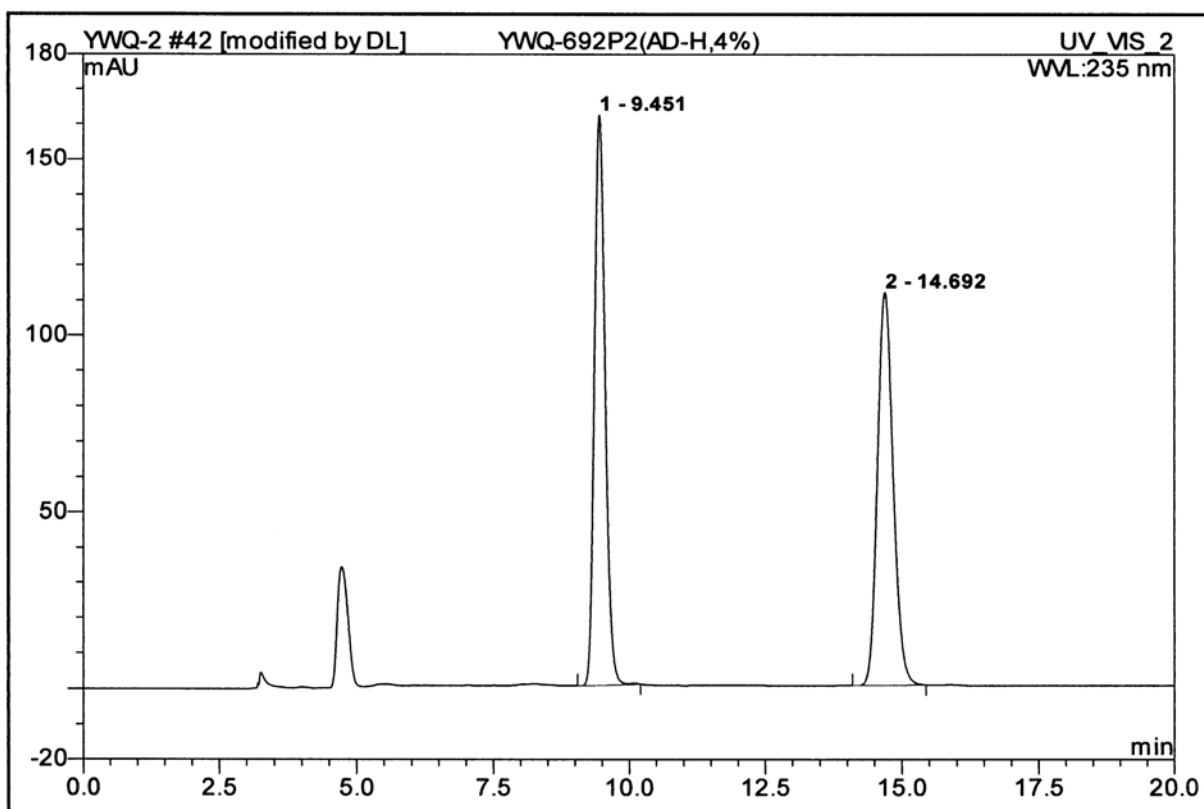
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	10.04	n.a.	338.577	92.440	96.22	n.a.	BM *
2	11.35	n.a.	12.641	3.630	3.78	n.a.	MB*
Total:			351.217	96.070	100.00	0.000	



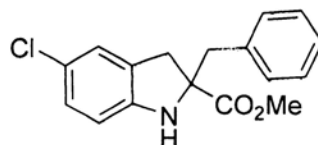
42 YWQ-692P2(AD-H,4%)

Sample Name: YWQ-692P2(AD-H,4%)
Vial Number: 37
Sample Type: unknown
Control Program: pql20091111
Quantif. Method: pql20091111
Recording Time: 7:54 PM
Run Time (min): 20.00

Injection Volume: 10.0
Channel: UV_VIS_2
Wavelength: 235
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



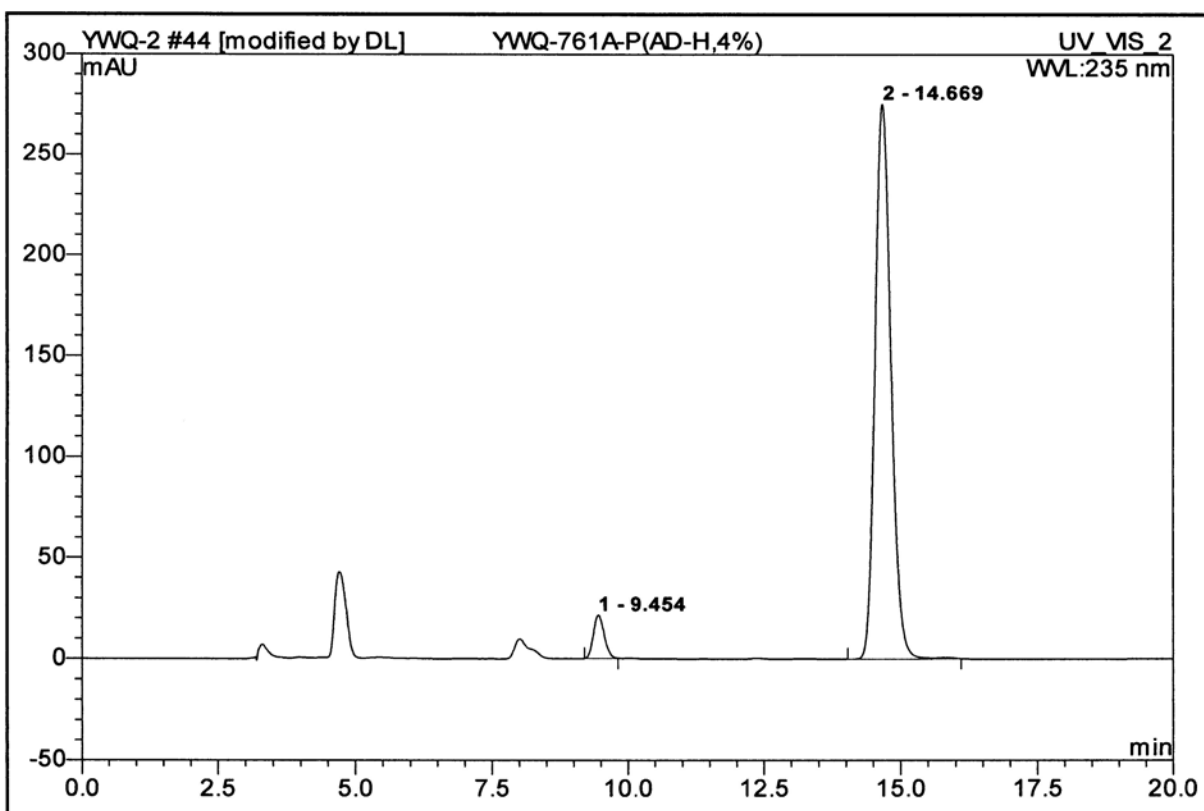
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	9.45	n.a.	161.476	36.857	50.00	n.a.	BMB*
2	14.69	n.a.	111.252	36.850	50.00	n.a.	BMB*
Total:			272.728	73.707	100.00	0.000	

**(rac)-2g**

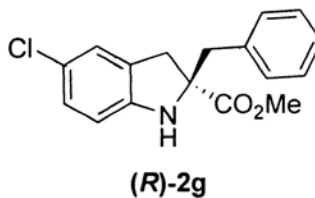
44 YWQ-761A-P(AD-H,4%)

Sample Name: YWQ-761A-P(AD-H,4%)
Vial Number: 39
Sample Type: unknown
Control Program: pql20091111
Quantif. Method: pql20091111
Recording Time: 8:16 PM
Run Time (min): 20.00

Injection Volume: 10.0
Channel: UV_VIS_2
Wavelength: 235
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



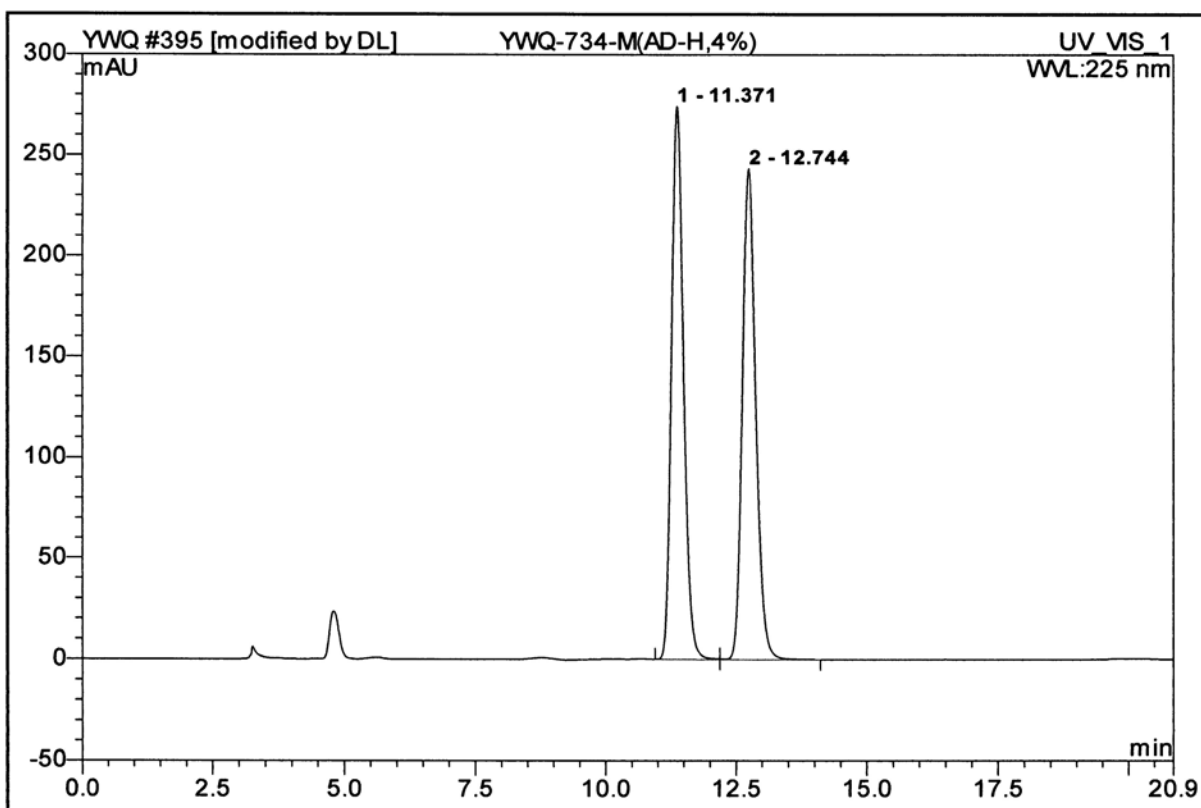
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	9.45	n.a.	21.233	4.865	5.00	n.a.	BMB*
2	14.67	n.a.	274.968	92.376	95.00	n.a.	BMB*
Total:			296.200	97.241	100.00	0.000	



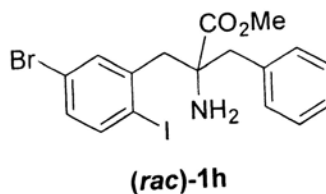
395 YWQ-734-M(AD-H,4%)

Sample Name: YWQ-734-M(AD-H,4%)
Vial Number: 384
Sample Type: unknown
Control Program: lzq20091015
Quantif. Method: lzq20091015
Recording Time: 9:23 PM
Run Time (min): 20.87

Injection Volume: 10.0
Channel: UV_VIS_1
Wavelength: 225
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



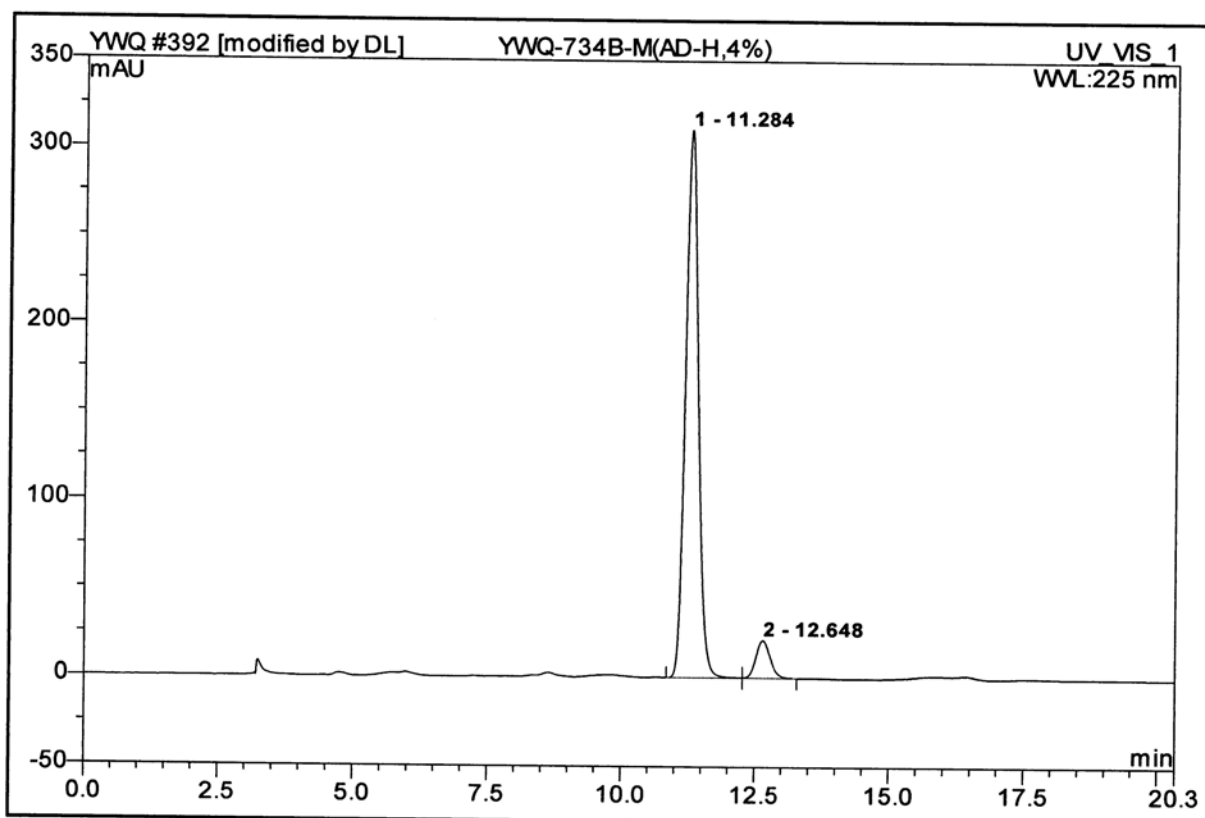
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	11.37	n.a.	274.116	73.244	50.00	n.a.	BM *
2	12.74	n.a.	243.195	73.244	50.00	n.a.	MB*
Total:			517.311	146.488	100.00	0.000	



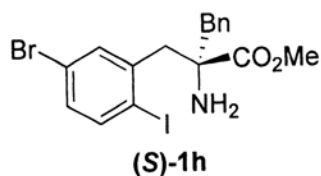
392 YWQ-734B-M(AD-H,4%)

Sample Name: YWQ-734B-M(AD-H,4%)
Vial Number: 381
Sample Type: unknown
Control Program: lzq20091015
Quantif. Method: lzq20091015
Recording Time: 7:32 PM
Run Time (min): 20.33

Injection Volume: 10.0
Channel: UV_VIS_1
Wavelength: 225
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



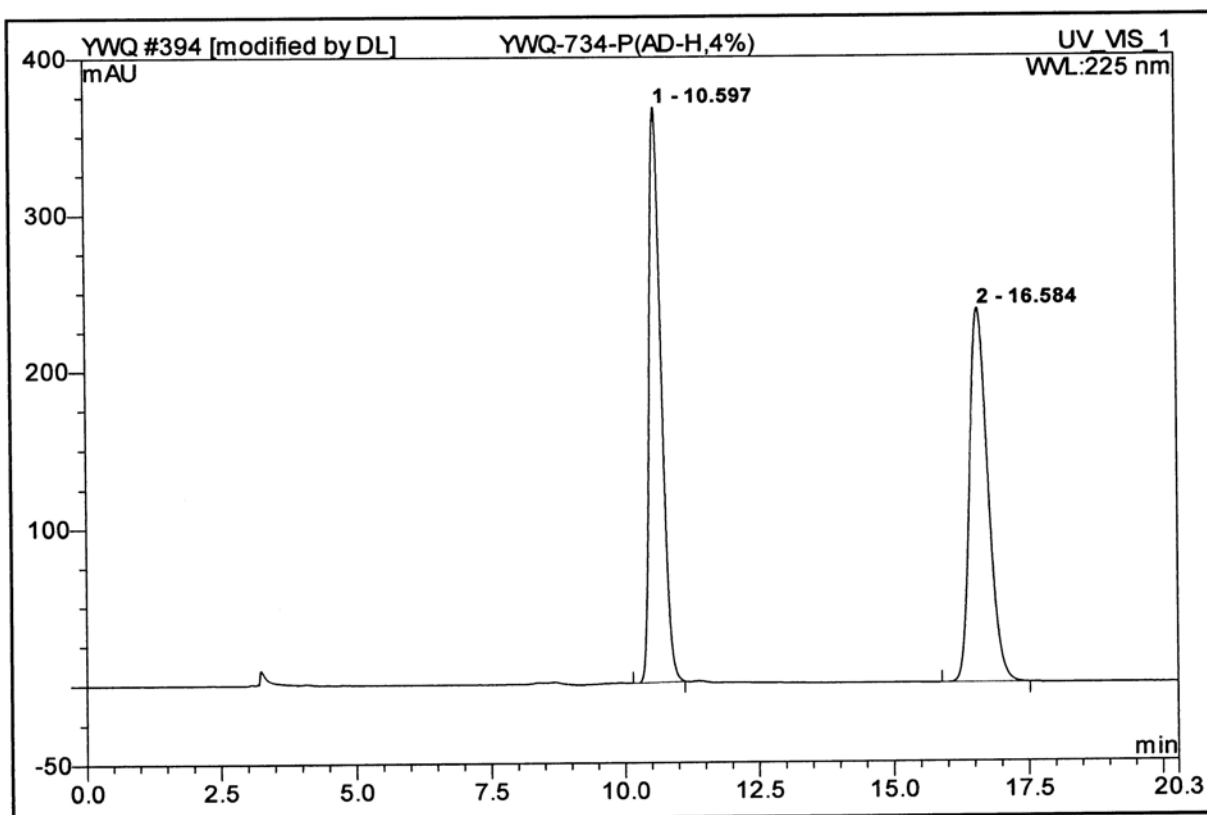
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	11.28	n.a.	310.472	86.527	93.04	n.a.	BM *
2	12.65	n.a.	21.034	6.470	6.96	n.a.	MB*
Total:			331.506	92.997	100.00	0.000	



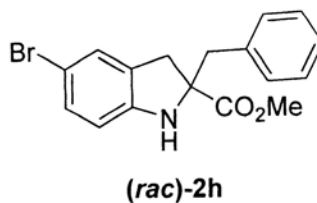
394 YWQ-734-P(AD-H,4%)

Sample Name: YWQ-734-P(AD-H,4%)
Vial Number: 383
Sample Type: unknown
Control Program: lzq20091015
Quantif. Method: lzq20091015
Recording Time: 8:18 PM
Run Time (min): 20.29

Injection Volume: 10.0
Channel: UV_VIS_1
Wavelength: 225
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



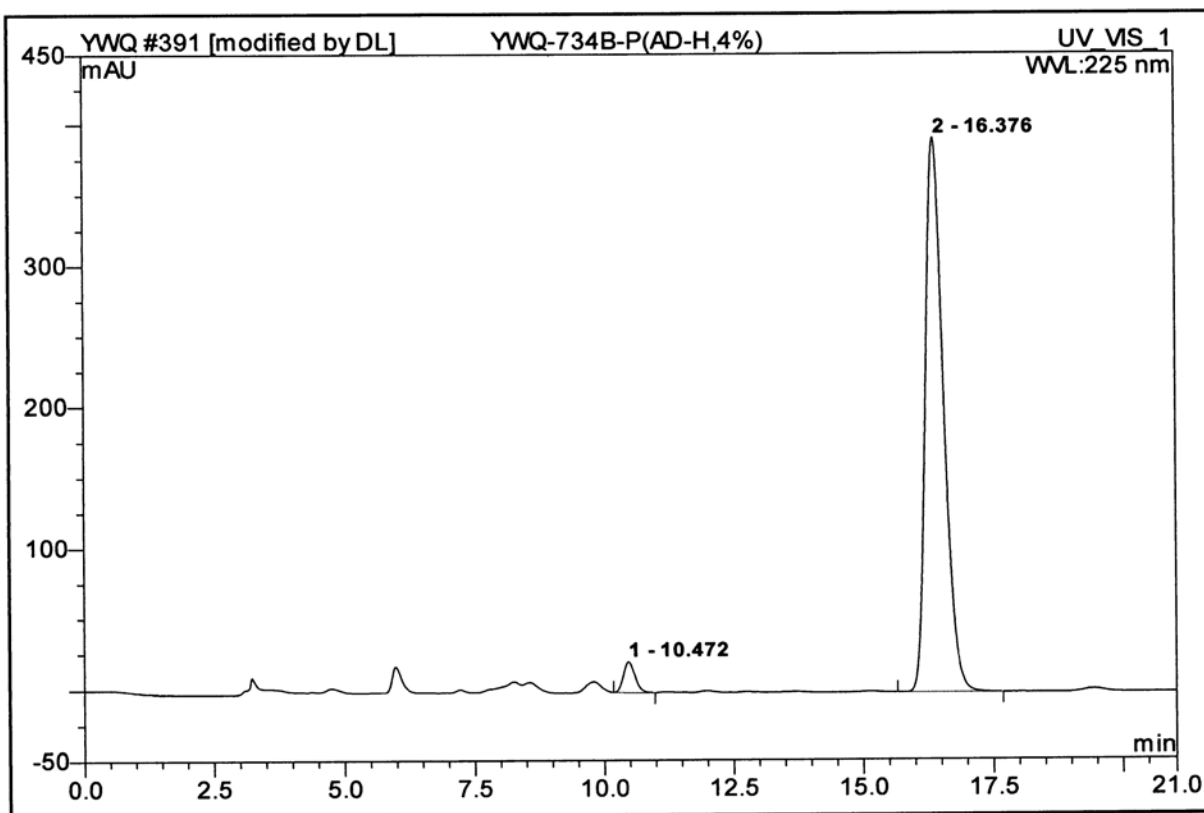
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	10.60	n.a.	366.415	94.460	50.00	n.a.	BMB*
2	16.58	n.a.	238.195	94.457	50.00	n.a.	BMB*
Total:			604.610	188.916	100.00	0.000	



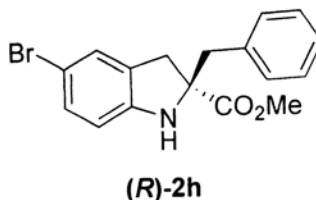
391 YWQ-734B-P(AD-H,4%)

Sample Name: YWQ-734B-P(AD-H,4%)
Vial Number: 380
Sample Type: unknown
Control Program: lzq20091015
Quantif. Method: lzq20091015
Recording Time: 7:10 PM
Run Time (min): 21.04

Injection Volume: 10.0
Channel: UV_VIS_1
Wavelength: 225
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



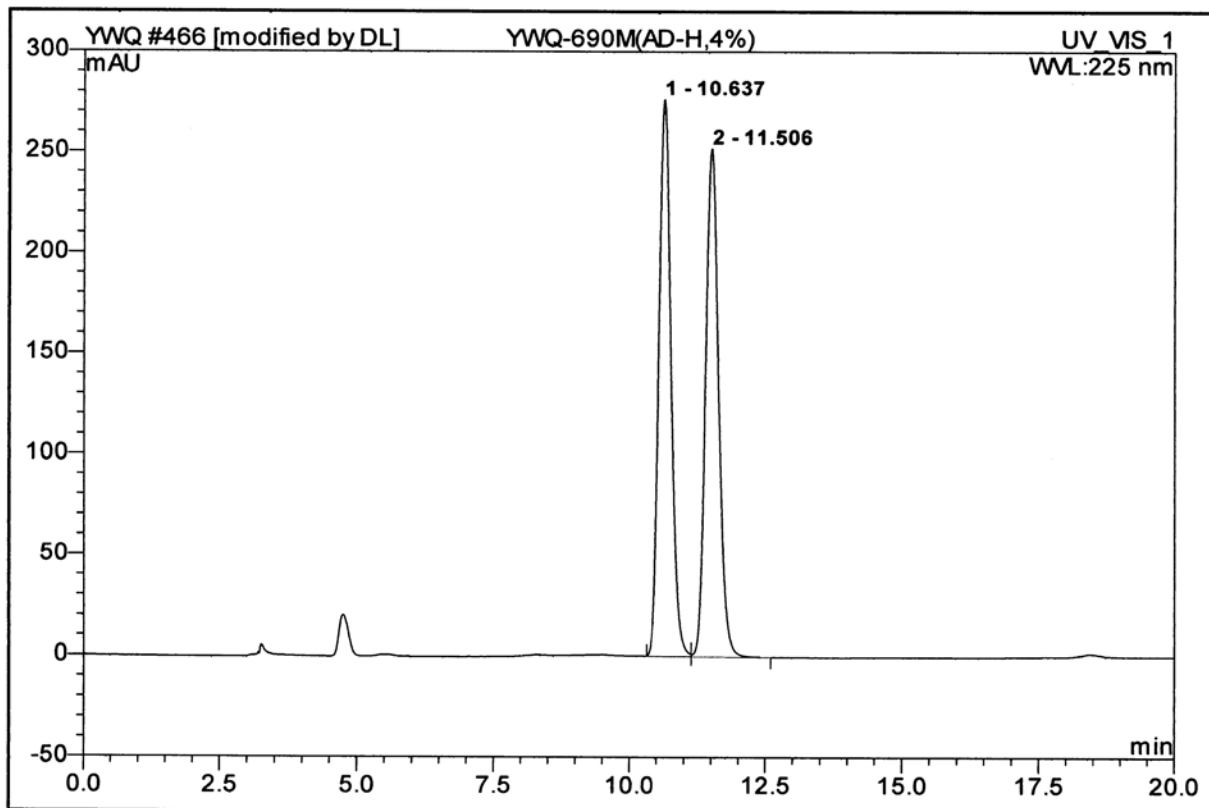
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	10.47	n.a.	21.408	5.568	3.42	n.a.	BMB*
2	16.38	n.a.	392.216	157.344	96.58	n.a.	BMB
Total:			413.624	162.911	100.00	0.000	



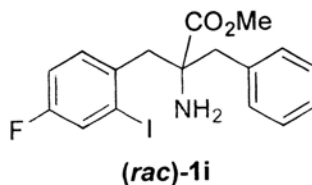
466 YWQ-690M(AD-H,4%)

Sample Name: YWQ-690M(AD-H,4%)
Vial Number: 460
Sample Type: unknown
Control Program: lzq20091015
Quantif. Method: lzq20091015
Recording Time: 8:58 PM
Run Time (min): 20.00

Injection Volume: 10.0
Channel: UV_VIS_1
Wavelength: 225
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



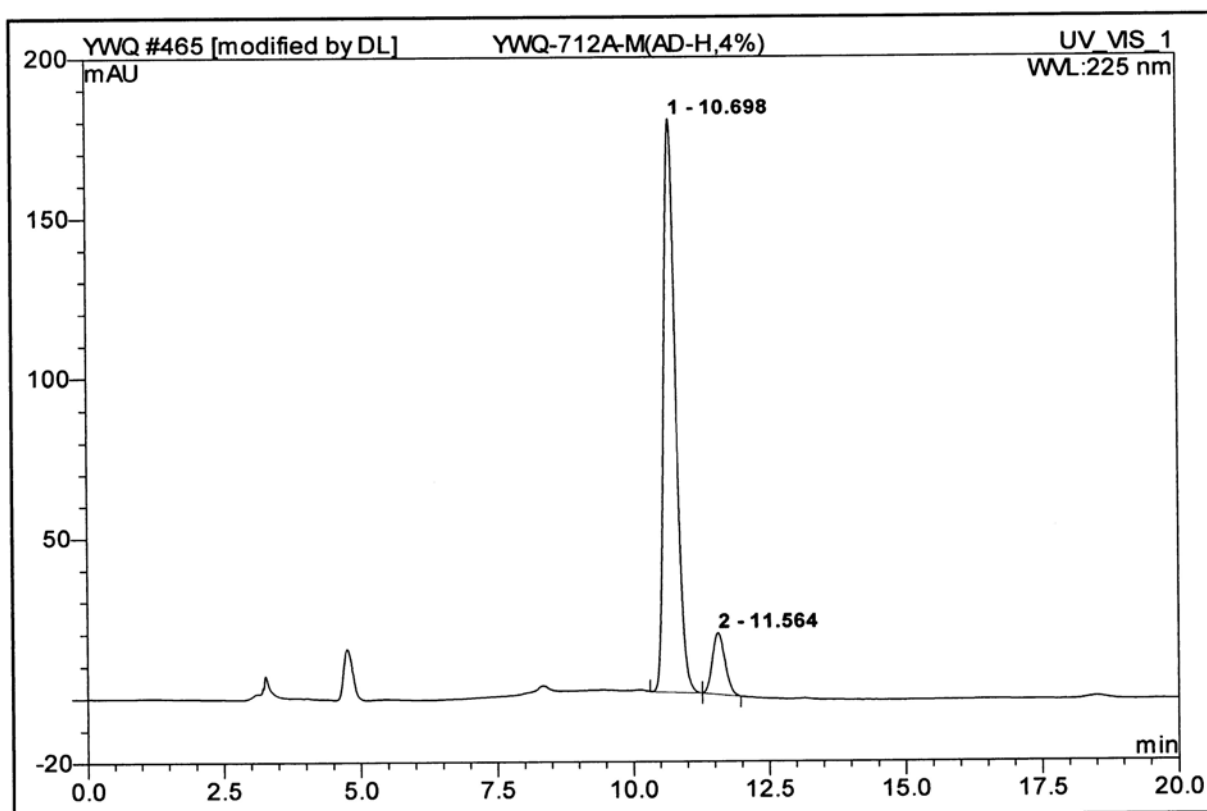
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	10.64	n.a.	276.014	71.060	50.48	n.a.	BM *
2	11.51	n.a.	251.940	69.716	49.52	n.a.	MB*
Total:			527.954	140.776	100.00	0.000	



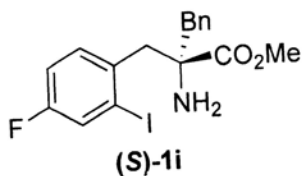
465 YWQ-712A-M(AD-H,4%)

Sample Name: YWQ-712A-M(AD-H,4%)
Vial Number: 459
Sample Type: unknown
Control Program: lzq20091015
Quantif. Method: lzq20091015
Recording Time: 8:29 PM
Run Time (min): 20.02

Injection Volume: 10.0
Channel: UV_VIS_1
Wavelength: 225
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



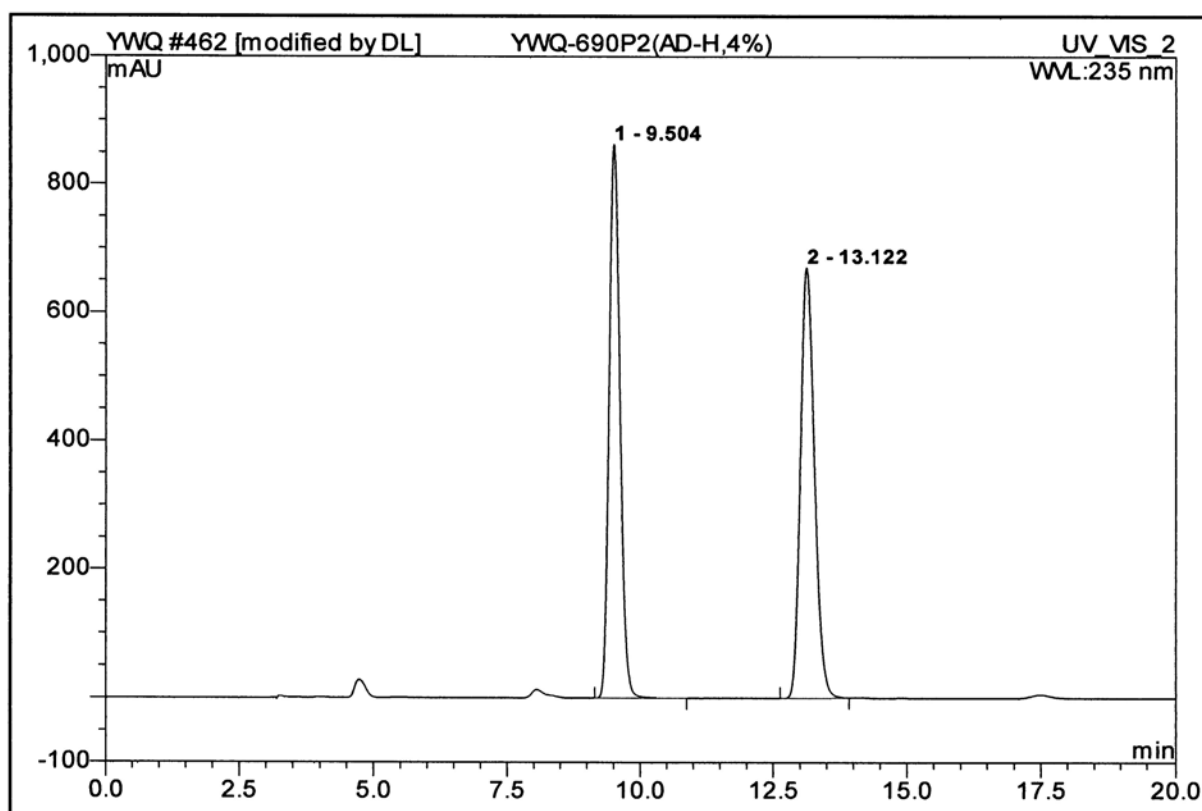
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	10.70	n.a.	178.816	45.475	90.03	n.a.	BMb*
2	11.56	n.a.	18.929	5.035	9.97	n.a.	bMB*
Total:			197.746	50.509	100.00	0.000	



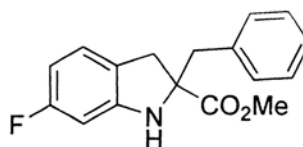
462 YWQ-690P2(AD-H,4%)

Sample Name: YWQ-690P2(AD-H,4%)
Vial Number: 456
Sample Type: unknown
Control Program: lzq20091015
Quantif. Method: lzq20091015
Recording Time: 7:28 PM
Run Time (min): 20.04

Injection Volume: 10.0
Channel: UV_VIS_2
Wavelength: 235
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



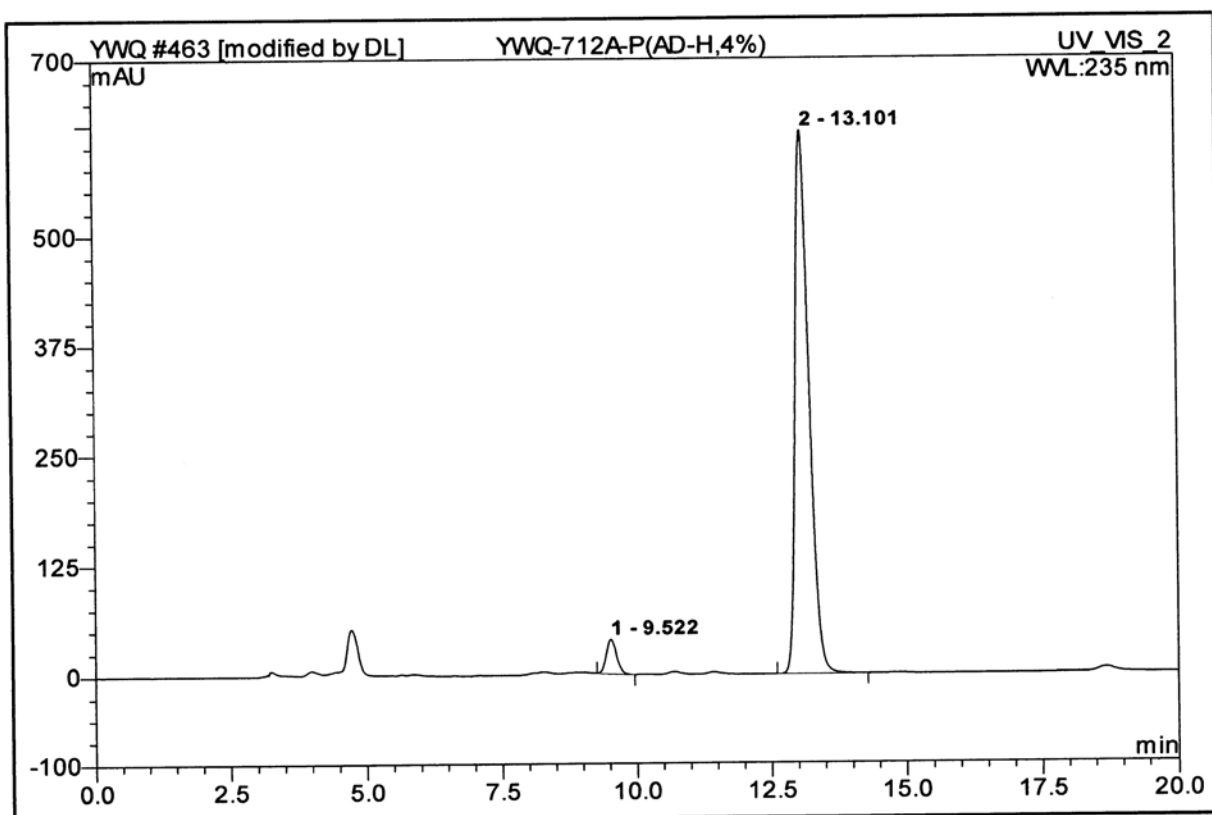
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	9.50	n.a.	861.992	203.784	50.00	n.a.	BMB*
2	13.12	n.a.	669.485	203.816	50.00	n.a.	BMB*
Total:			1531.478	407.600	100.00	0.000	

**(rac)-2i**

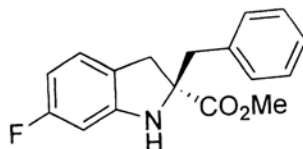
463 YWQ-712A-P(AD-H,4%)

Sample Name: YWQ-712A-P(AD-H,4%)
Vial Number: 457
Sample Type: unknown
Control Program: lzq20091015
Quantif. Method: lzq20091015
Recording Time: 7:48 PM
Run Time (min): 20.04

Injection Volume: 10.0
Channel: UV_VIS_2
Wavelength: 235
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



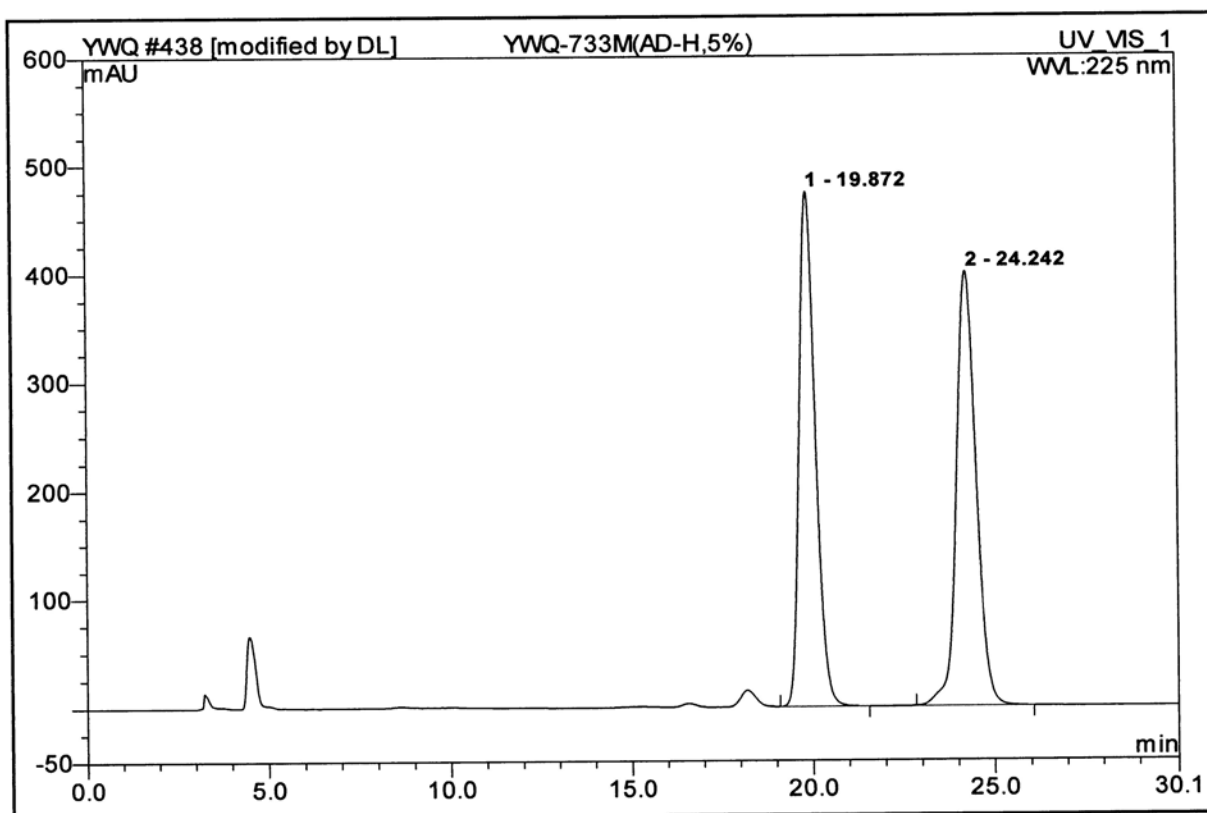
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	9.52	n.a.	38.302	8.297	4.37	n.a.	BMB*
2	13.10	n.a.	616.367	181.770	95.63	n.a.	BMB*
Total:			654.670	190.067	100.00	0.000	

**(R)-2i**

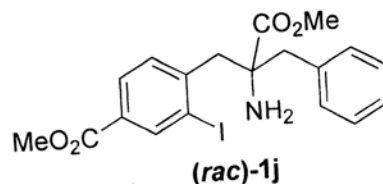
438 YWQ-733M(AD-H,5%)

Sample Name: YWQ-733M(AD-H,5%)
Vial Number: 430
Sample Type: unknown
Control Program: lzq20091015
Quantif. Method: lzq20091015
Recording Time: 7:55 PM
Run Time (min): 30.08

Injection Volume: 10.0
Channel: UV_VIS_1
Wavelength: 225
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



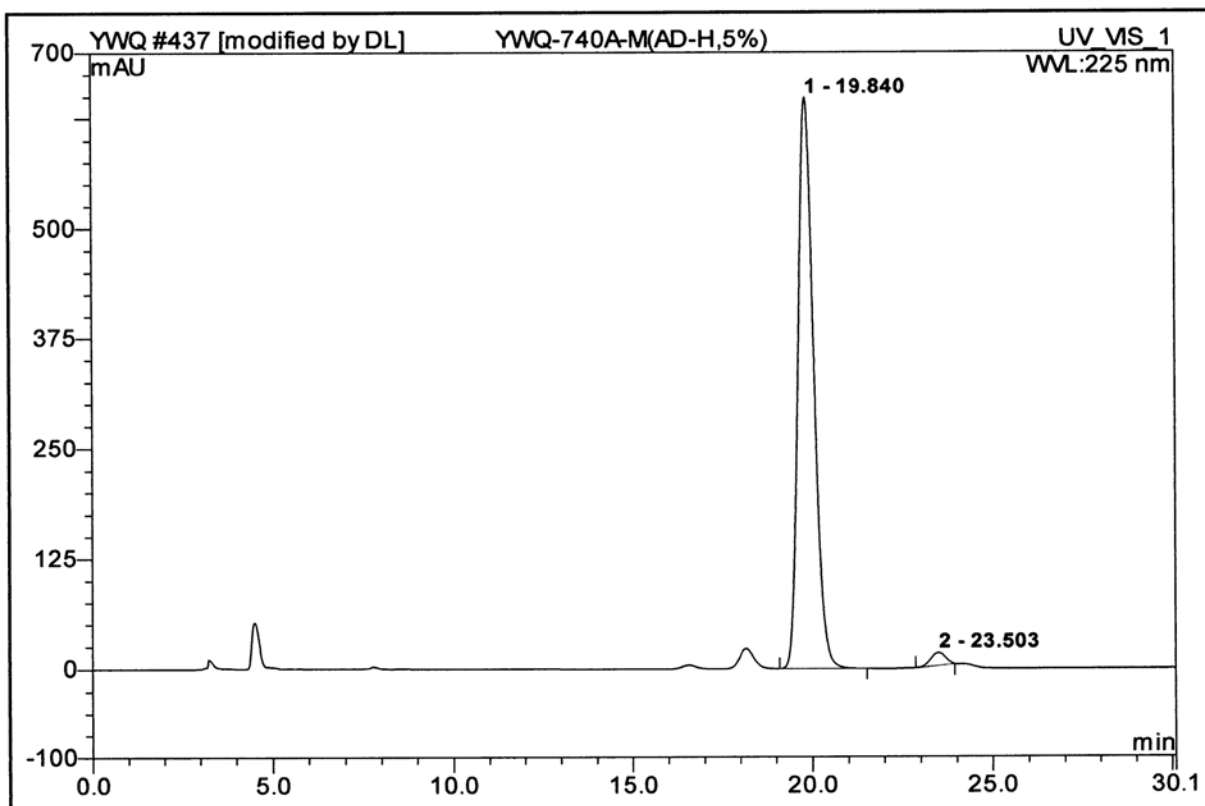
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	19.87	n.a.	474.456	244.556	49.41	n.a.	BMB*
2	24.24	n.a.	400.345	250.442	50.59	n.a.	BMB*
Total:			874.801	494.998	100.00	0.000	



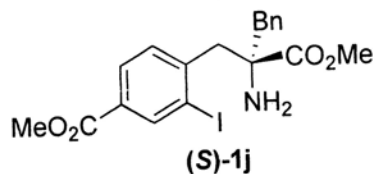
437 YWQ-740A-M(AD-H,5%)

Sample Name: YWQ-740A-M(AD-H,5%)
Vial Number: 429
Sample Type: unknown
Control Program: lzq20091015
Quantif. Method: lzq20091015
Recording Time: 7:24 PM
Run Time (min): 30.11

Injection Volume: 10.0
Channel: UV_VIS_1
Wavelength: 225
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



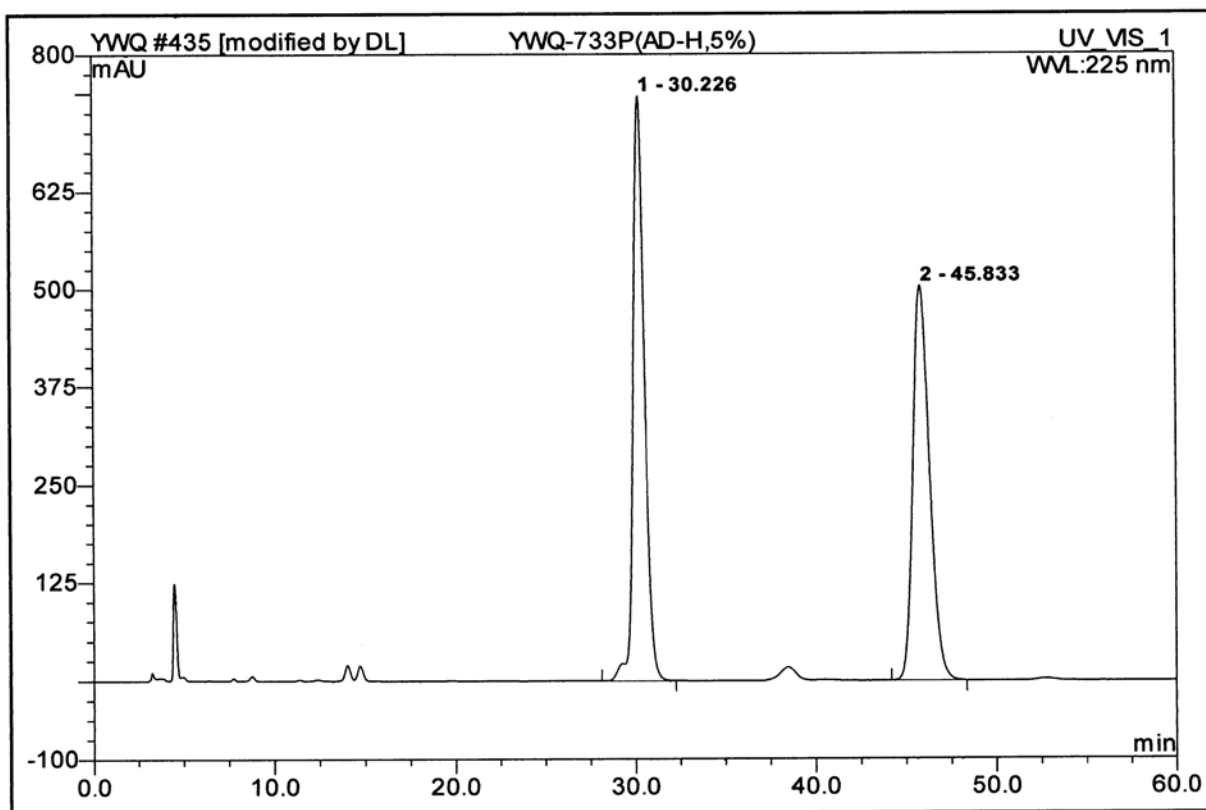
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	19.84	n.a.	648.083	325.139	98.00	n.a.	BMB*
2	23.50	n.a.	14.358	6.622	2.00	n.a.	BMB*
Total:			662.440	331.761	100.00	0.000	



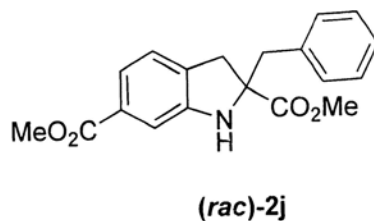
435 YWQ-733P(AD-H,5%)

Sample Name: YWQ-733P(AD-H,5%)
Vial Number: 427
Sample Type: unknown
Control Program: lzq20091015
Quantif. Method: lzq20091015
Recording Time: 5:22 PM
Run Time (min): 60.00

Injection Volume: 10.0
Channel: UV_VIS_1
Wavelength: 225
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



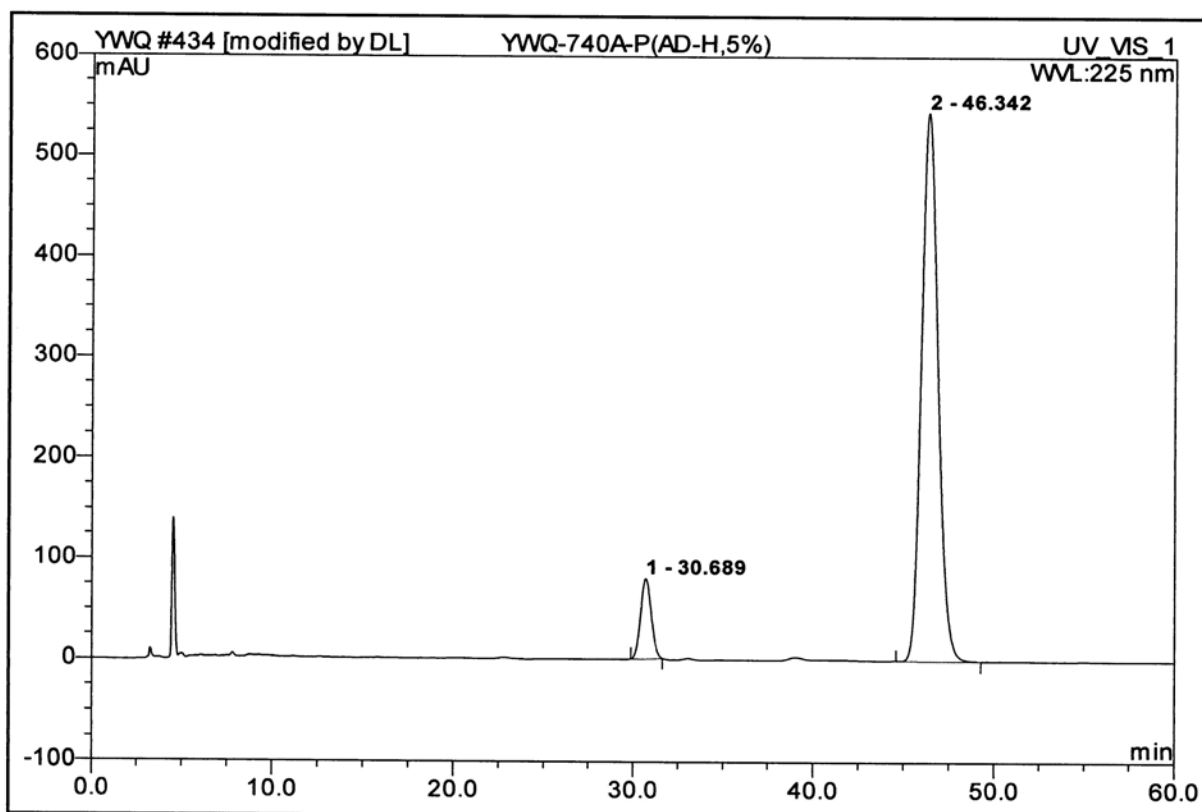
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	30.23	n.a.	746.569	546.667	50.59	n.a.	BMB*
2	45.83	n.a.	503.574	533.993	49.41	n.a.	BMB
Total:			1250.143	1080.659	100.00	0.000	



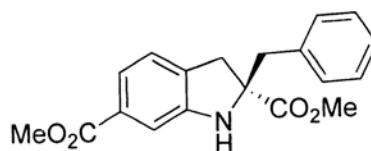
434 YWQ-740A-P(AD-H,5%)

Sample Name: YWQ-740A-P(AD-H,5%)
Vial Number: 426
Sample Type: unknown
Control Program: lzq20091015
Quantif. Method: lzq20091015
Recording Time: 4:21 PM
Run Time (min): 60.04

Injection Volume: 10.0
Channel: UV_VIS_1
Wavelength: 225
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



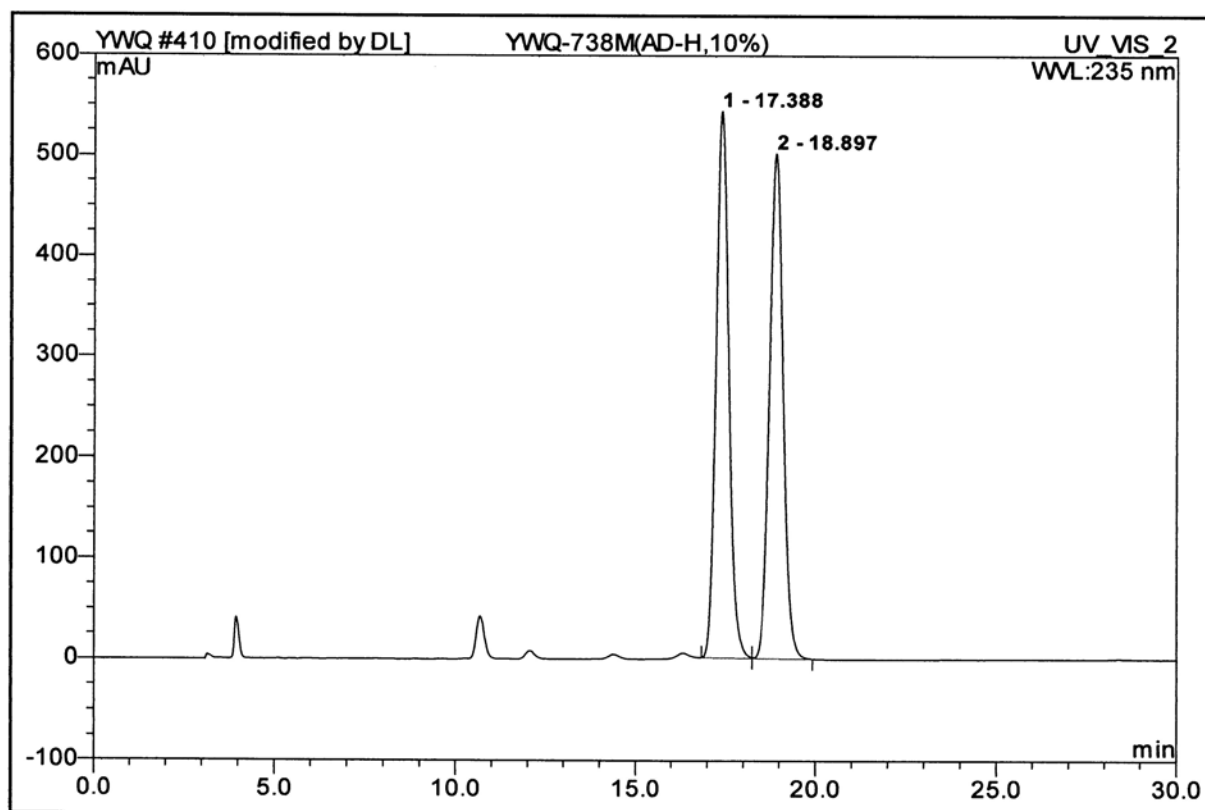
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	30.69	n.a.	79.341	54.168	8.56	n.a.	BMB*
2	46.34	n.a.	544.191	578.667	91.44	n.a.	BMB*
Total:			623.533	632.835	100.00	0.000	

**(R)-2j**

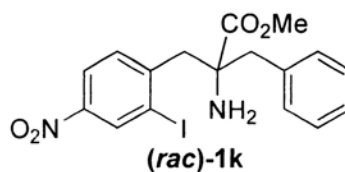
410 YWQ-738M(AD-H,10%)

Sample Name: YWQ-738M(AD-H,10%)
Vial Number: 404
Sample Type: unknown
Control Program: lzq20091015
Quantif. Method: lzq20091015
Recording Time: 3:05 PM
Run Time (min): 30.01

Injection Volume: 10.0
Channel: UV_VIS_2
Wavelength: 235
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



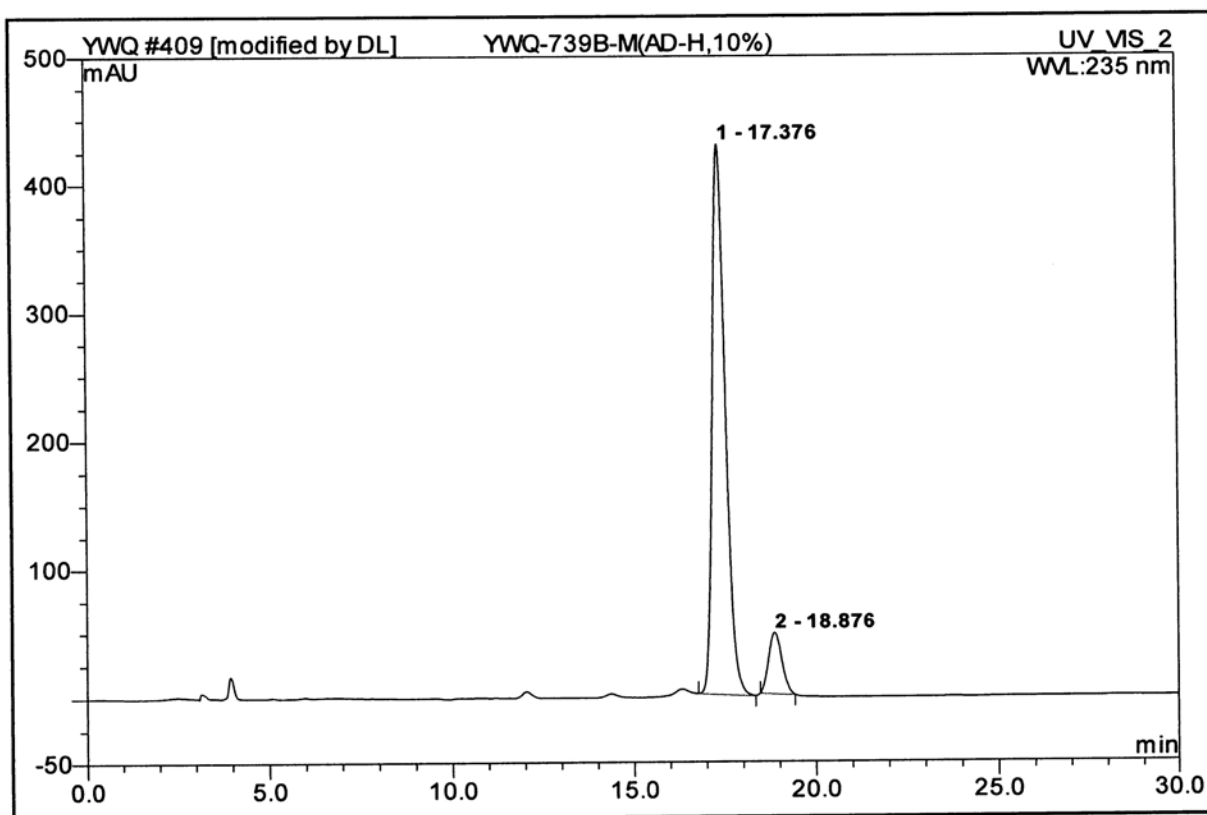
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	17.39	n.a.	542.251	222.323	50.32	n.a.	BM *
2	18.90	n.a.	501.121	219.519	49.68	n.a.	MB*
Total:			1043.372	441.841	100.00	0.000	



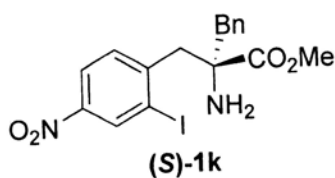
409 YWQ-739B-M(AD-H,10%)

Sample Name: YWQ-739B-M(AD-H,10%)
Vial Number: 403
Sample Type: unknown
Control Program: lzq20091015
Quantif. Method: lzq20091015
Recording Time: 2:34 PM
Run Time (min): 29.96

Injection Volume: 10.0
Channel: UV_VIS_2
Wavelength: 235
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



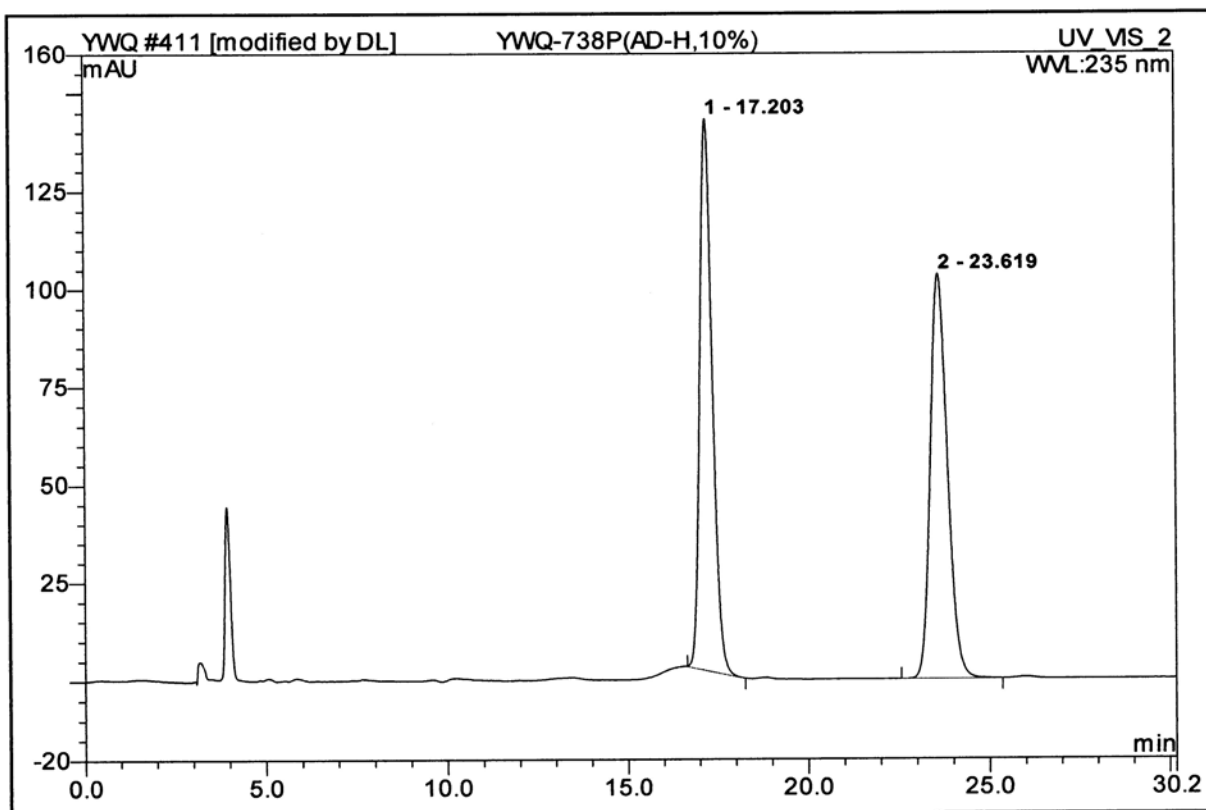
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	17.38	n.a.	428.205	176.996	90.08	n.a.	BMB*
2	18.88	n.a.	46.832	19.496	9.92	n.a.	BMB*
Total:			475.037	196.492	100.00	0.000	



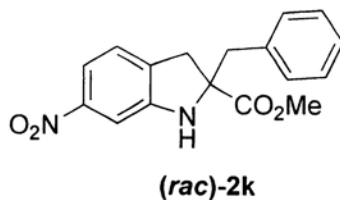
411 YWQ-738P(AD-H,10%)

Sample Name: YWQ-738P(AD-H,10%)
Vial Number: 405
Sample Type: unknown
Control Program: lzq20091015
Quantif. Method: lzq20091015
Recording Time: 3:36 PM
Run Time (min): 30.19

Injection Volume: 10.0
Channel: UV_VIS_2
Wavelength: 235
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



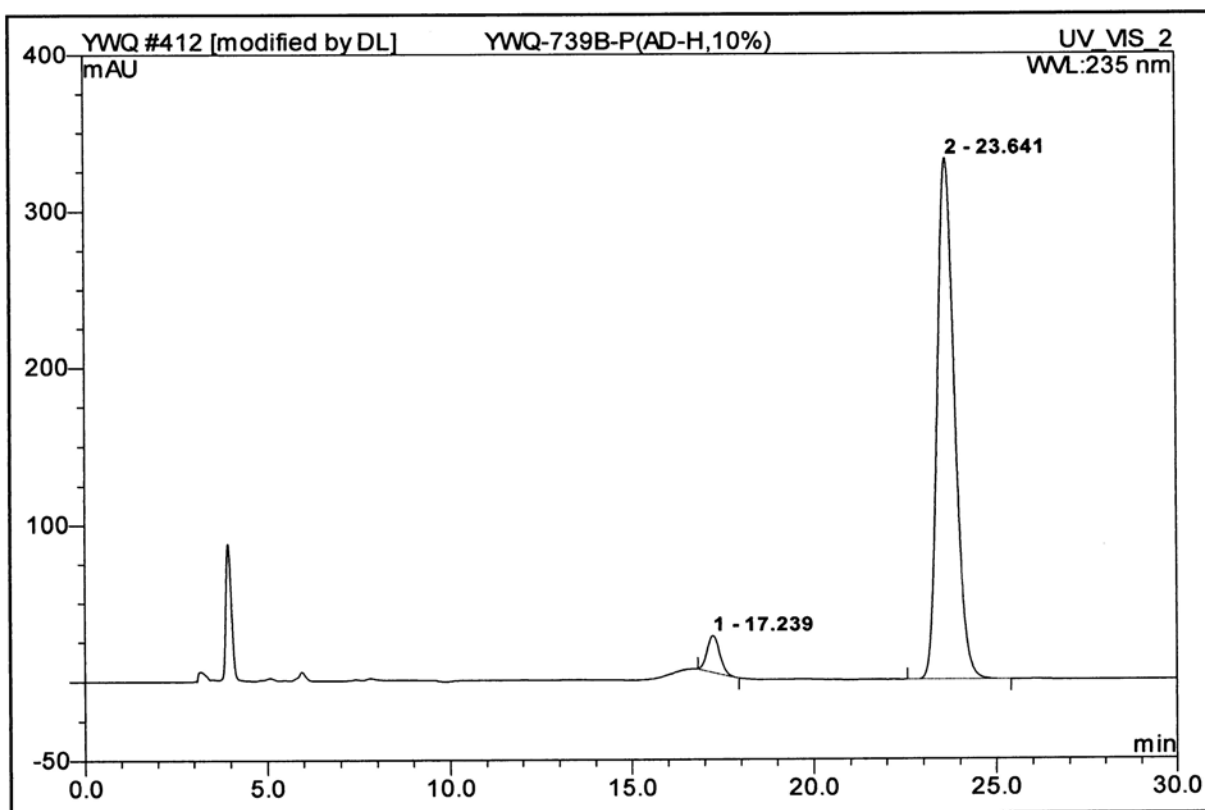
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	17.20	n.a.	140.695	56.343	50.00	n.a.	BMB*
2	23.62	n.a.	103.295	56.336	50.00	n.a.	BMB*
Total:			243.989	112.679	100.00	0.000	



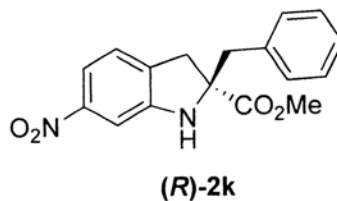
412 YWQ-739B-P(AD-H,10%)

Sample Name: YWQ-739B-P(AD-H,10%)
Vial Number: 406
Sample Type: unknown
Control Program: lzq20091015
Quantif. Method: lzq20091015
Recording Time: 4:07 PM
Run Time (min): 29.98

Injection Volume: 10.0
Channel: UV_VIS_2
Wavelength: 235
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



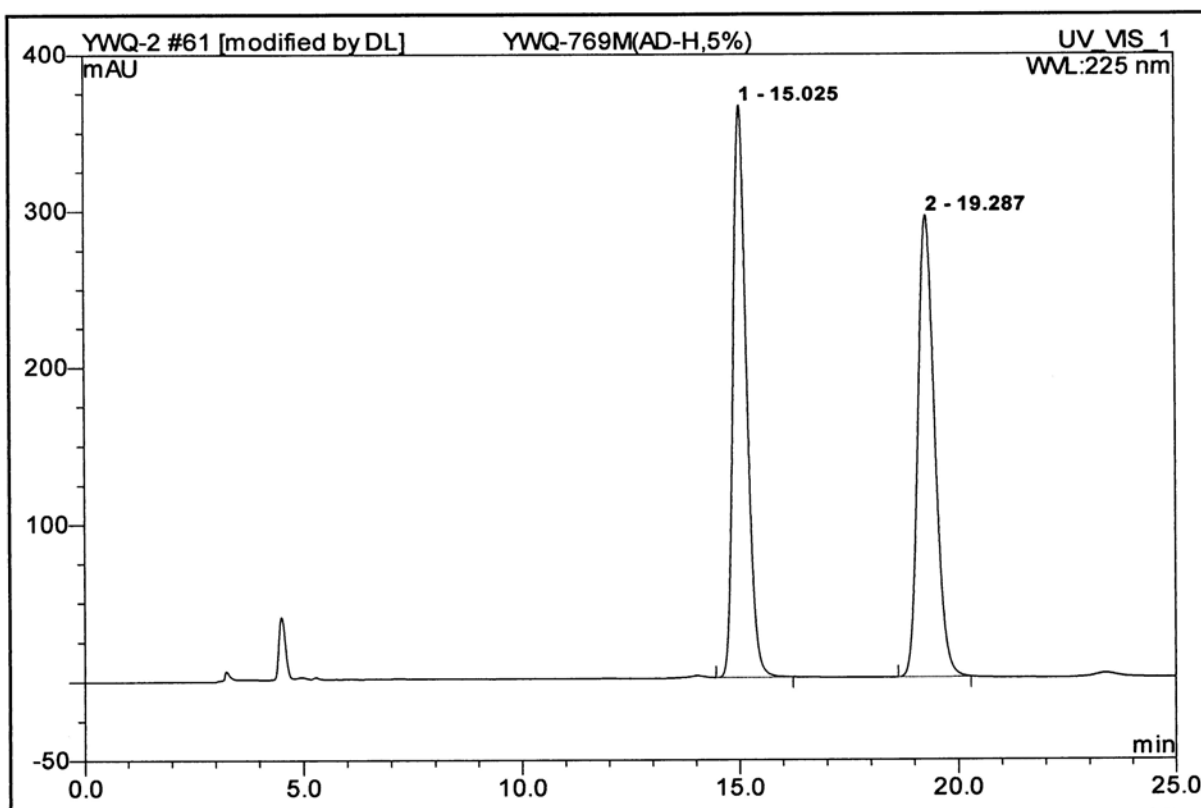
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	17.24	n.a.	23.094	9.091	4.76	n.a.	BMB*
2	23.64	n.a.	332.208	181.759	95.24	n.a.	BMB*
Total:			355.301	190.850	100.00	0.000	



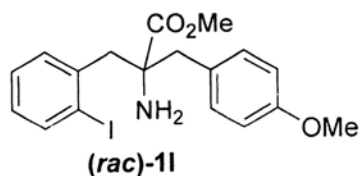
61 YWQ-769M(AD-H,5%)

Sample Name: YWQ-769M(AD-H,5%)
Vial Number: 53
Sample Type: unknown
Control Program: pql20091111
Quantif. Method: pql20091111
Recording Time: 2:02 PM
Run Time (min): 25.00

Injection Volume: 10.0
Channel: UV_VIS_1
Wavelength: 225
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



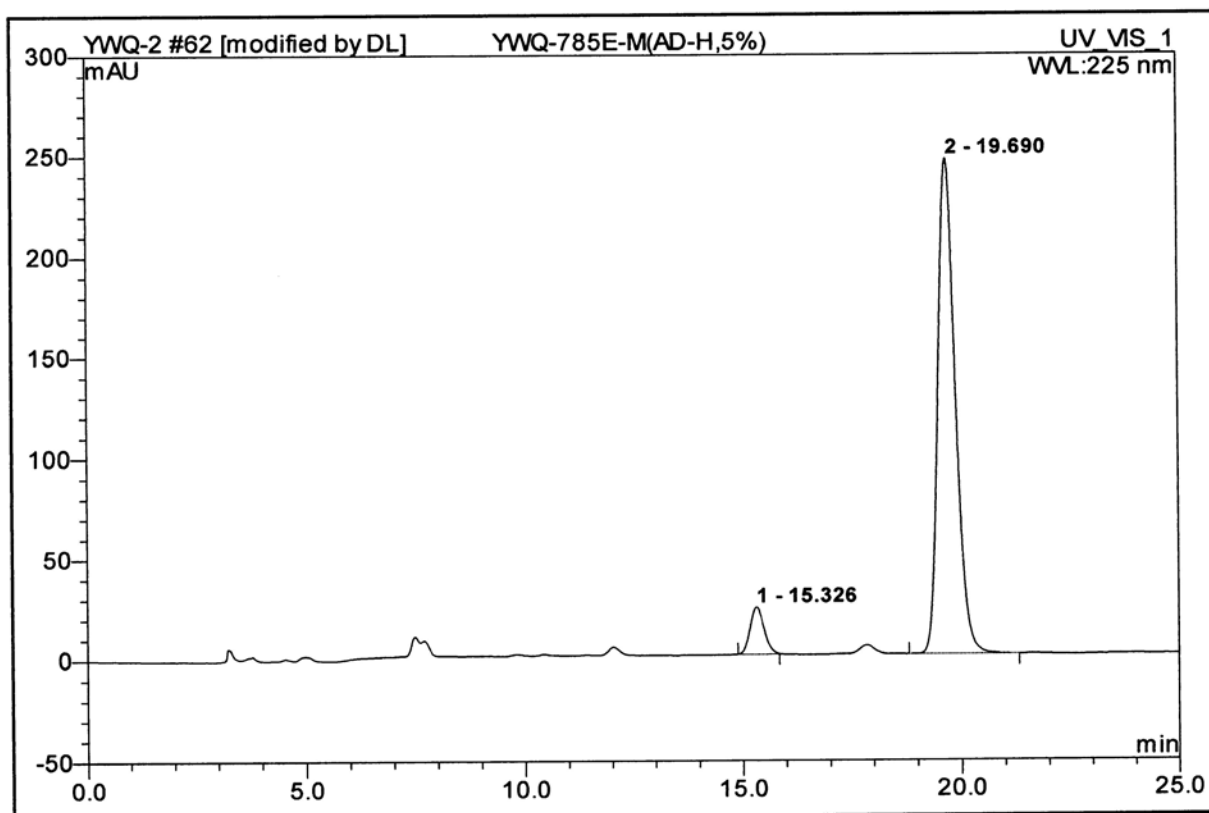
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	15.02	n.a.	364.558	130.264	50.00	n.a.	BMB*
2	19.29	n.a.	294.189	130.273	50.00	n.a.	BMB*
Total:			658.746	260.537	100.00	0.000	



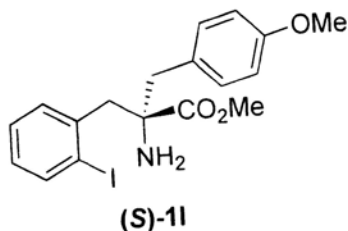
62 YWQ-785E-M(AD-H,5%)

Sample Name: YWQ-785E-M(AD-H,5%)
Vial Number: 55
Sample Type: unknown
Control Program: pql20091111
Quantif. Method: pql20091111
Recording Time: 4:43 PM
Run Time (min): 25.00

Injection Volume: 10.0
Channel: UV_VIS_1
Wavelength: 225
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



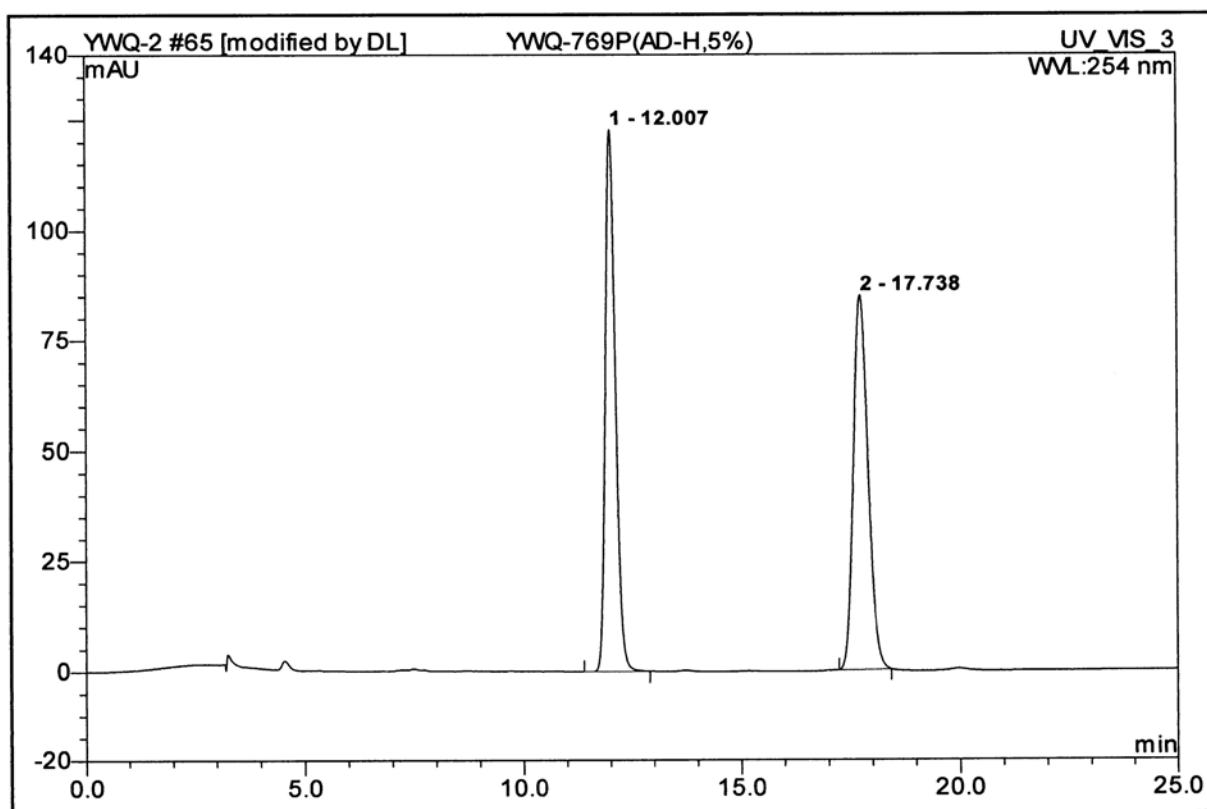
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	15.33	n.a.	23.179	8.479	7.00	n.a.	BMB*
2	19.69	n.a.	245.646	112.740	93.00	n.a.	BMB*
Total:			268.826	121.220	100.00	0.000	



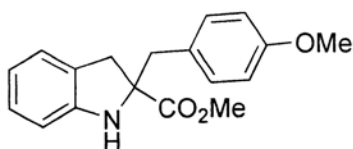
65 YWQ-769P(AD-H,5%)

Sample Name: YWQ-769P(AD-H,5%)
Vial Number: 57
Sample Type: unknown
Control Program: pql20091111
Quantif. Method: pql20091111
Recording Time: 4:09 PM
Run Time (min): 25.00

Injection Volume: 10.0
Channel: UV_VIS_3
Wavelength: 254
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



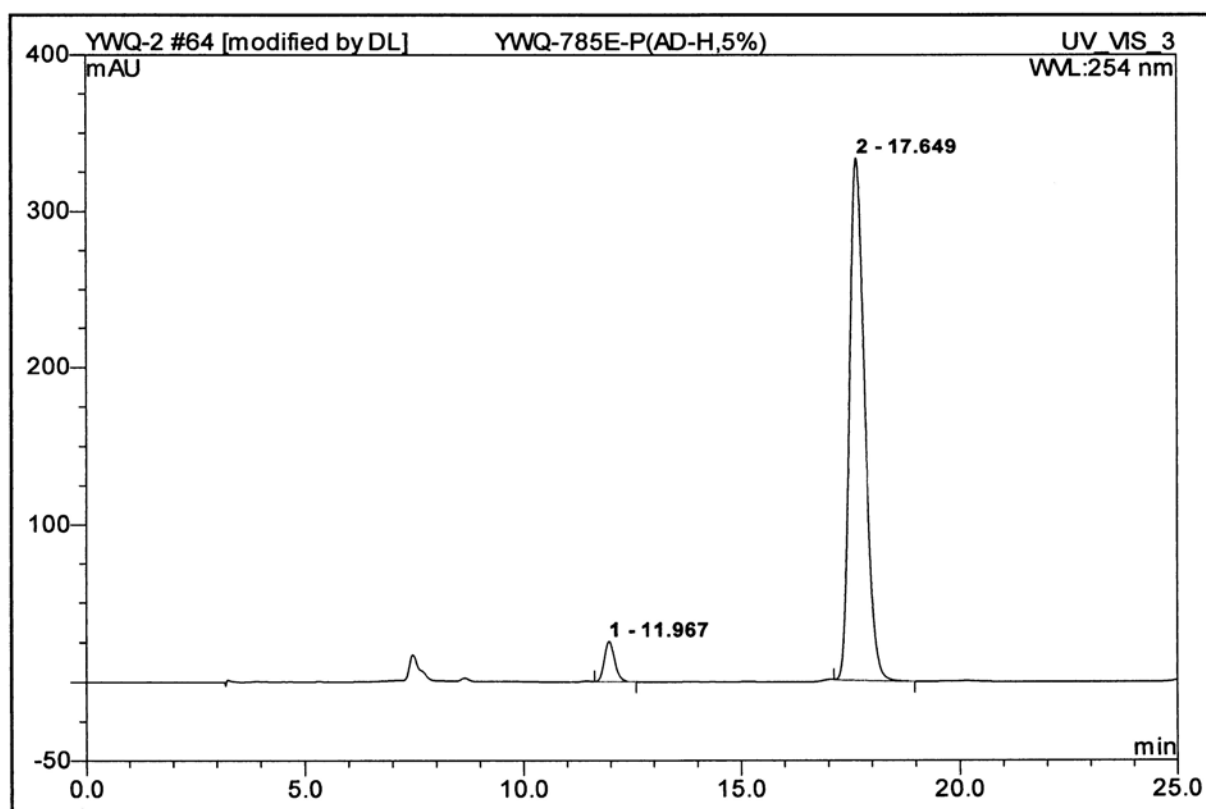
No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	12.01	n.a.	122.741	32.814	50.00	n.a.	BMB*
2	17.74	n.a.	84.788	32.811	50.00	n.a.	BMB*
Total:			207.529	65.625	100.00	0.000	

**(rac)-2I**

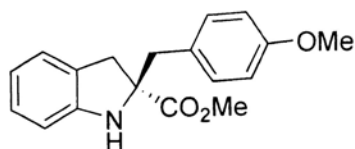
64 YWQ-785E-P(AD-H,5%)

Sample Name: YWQ-785E-P(AD-H,5%)
Vial Number: 56
Sample Type: unknown
Control Program: pql20091111
Quantif. Method: pql20091111
Recording Time: 3:34 PM
Run Time (min): 25.00

Injection Volume: 10.0
Channel: UV_VIS_3
Wavelength: 254
Bandwidth: 1
Dilution Factor: 1.0000
Sample Weight: 1.0000
Sample Amount: 1.0000



No.	Ret.Time min	Peak Name	Height mAU	Area mAU*min	Rel.Area %	Amount	Type
1	11.97	n.a.	25.303	6.966	4.97	n.a.	BMB*
2	17.65	n.a.	332.451	133.250	95.03	n.a.	BMB*
Total:			357.754	140.216	100.00	0.000	

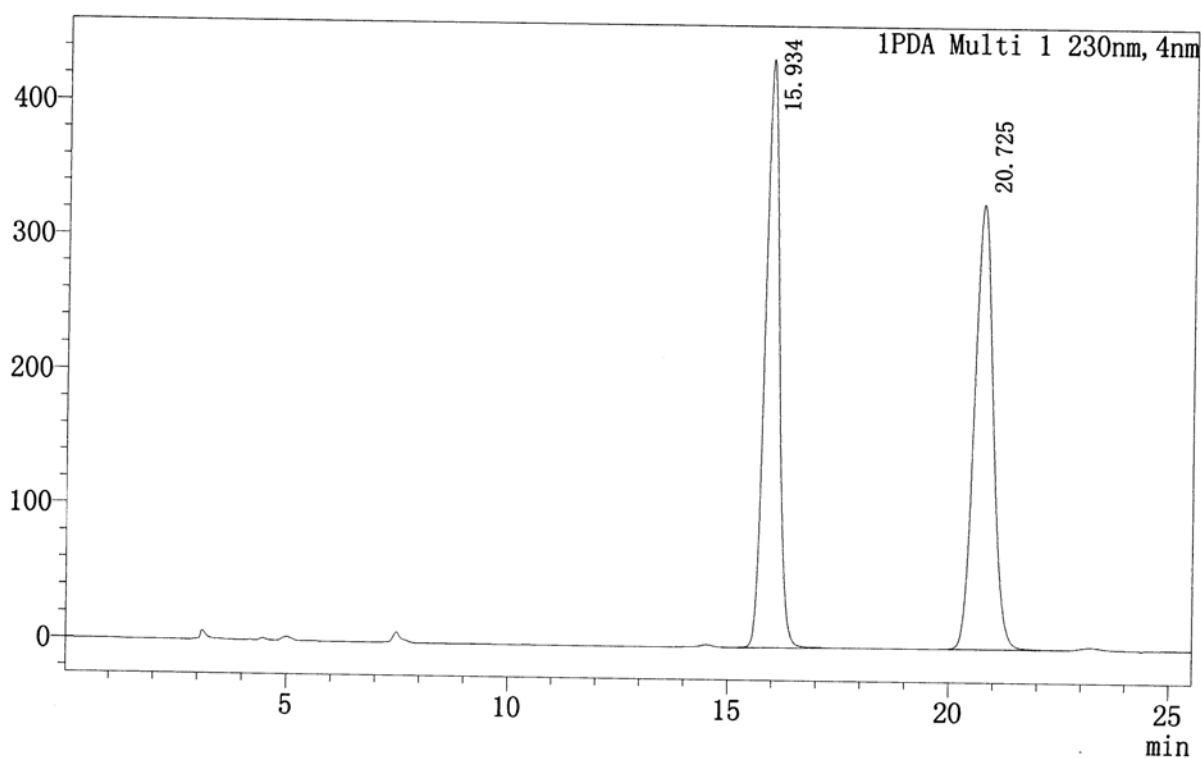
**(R)-2l**

Data Report

Sample Information

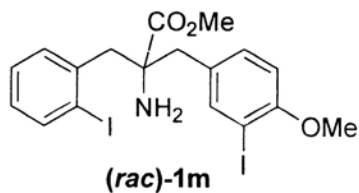
Sample Name : 35654M
 Tray# : 1
 Vial# : 2
 Injection Volume : 5
 Data File : 35654M,AD-H,4%.lcd
 Method File : YWQ2013.lcm
 Report Format File : Templates.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013-3-13 10:11:10
 Date Processed : 2013-3-29 20:18:31

mAU



PDA Ch1 230nm

NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	15.934	436590	9699783	49.856	--
2	20.725	330134	9755826	50.144	6.999

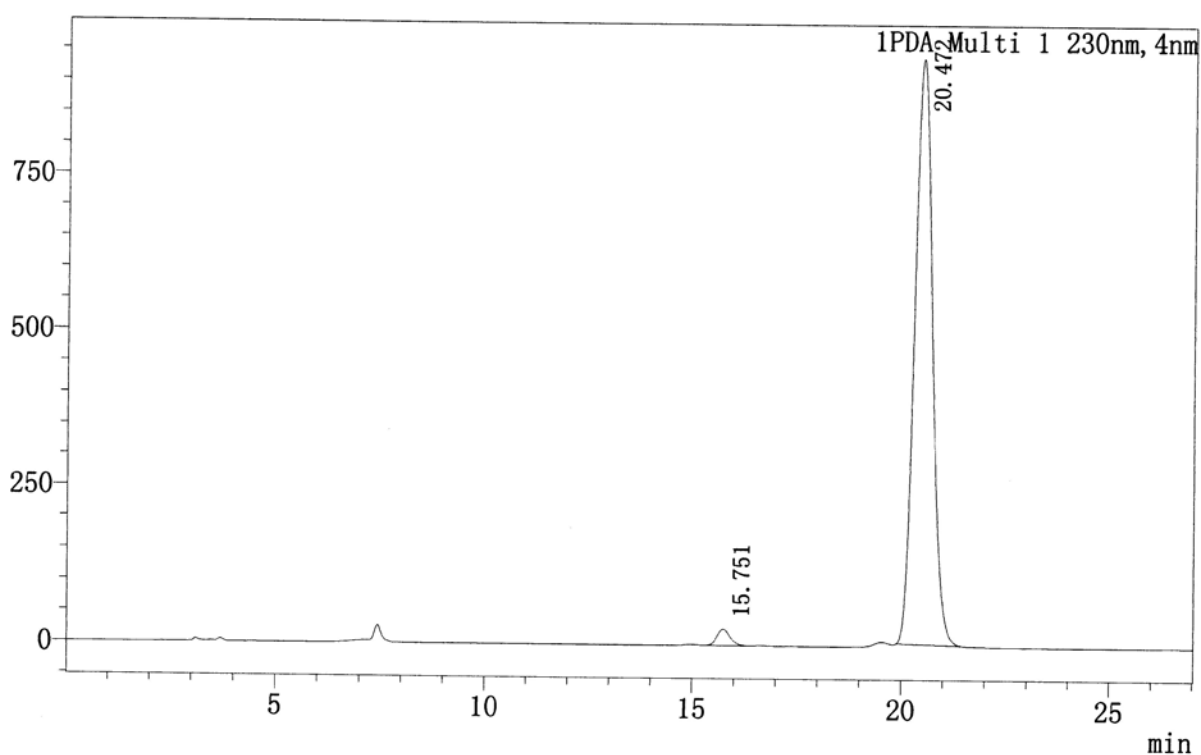


Data Report

Sample Information

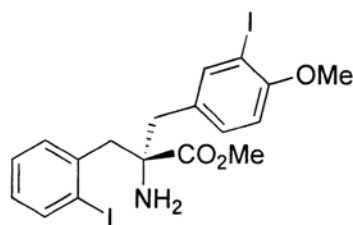
Sample Name : 35656B-M
 Tray# : 1
 Vial# : 6
 Injection Volume : 5
 Data File : 35656B-M,AD-H,4%.lcd
 Method File : 4%27min.lcm
 Report Format File : Templates.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013-3-13 11:33:29
 Date Processed : 2013-3-29 20:31:59

mAU



PDA Ch1 230nm

NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	15.751	26385	575135	2.030	--
2	20.472	937496	27751098	97.970	6.954



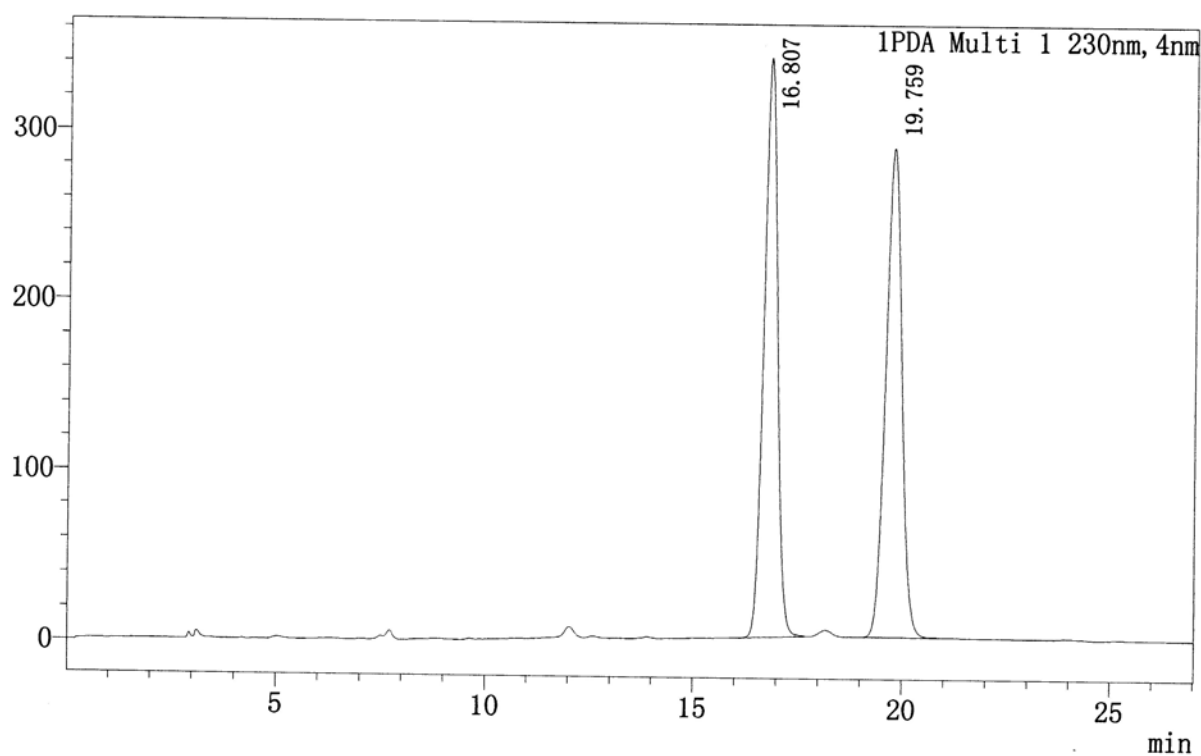
(S)-1m

Data Report

Sample Information

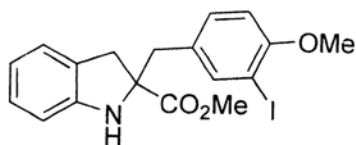
Sample Name : 35654P
Tray# : 1
Vial# : 1
Injection Volume : 5
Data File : 35654P,AD-H,4%.lcd
Method File : 4%27min.lcm
Report Format File : Templates.lsr
Sample Type : Unknown
Acquired by : System Administrator
Date Acquired : 2013-3-13 9:43:25
Date Processed : 2013-3-29 16:19:44

mAU



PDA Ch1 230nm

NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	16.807	340128	7650693	49.958	--
2	19.759	287198	7663687	50.042	4.522



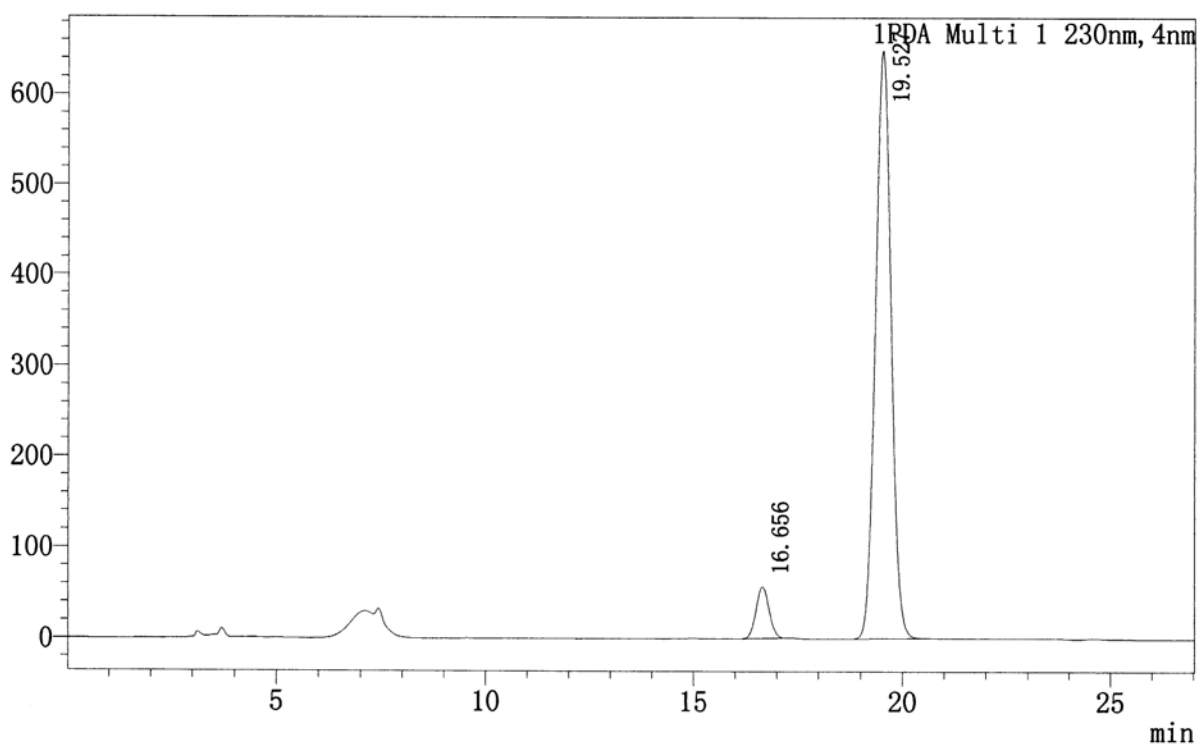
(rac)-2m

Data Report

Sample Information

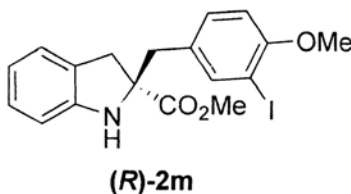
Sample Name : 35656B-P2
 Tray# : 1
 Vial# : 5
 Injection Volume : 5
 Data File : 35656B-P2,AD-H,4%.lcd
 Method File : 4%27min.lcm
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013-3-13 11:05:36
 Date Processed : 2013-3-29 20:39:09

mAU



PDA Ch1 230nm

NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution(USP)
1	16.656	57133	1237910	6.833	--
2	19.527	648785	16877444	93.167	4.510

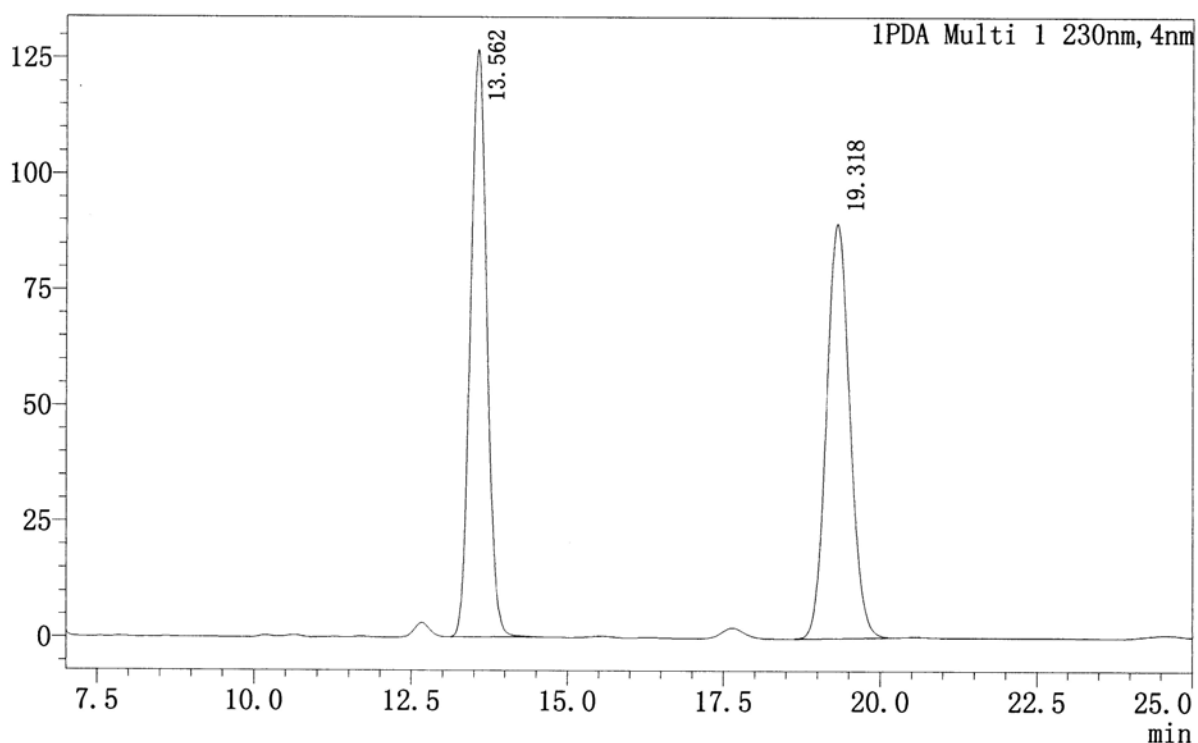


Data Report

Sample Information

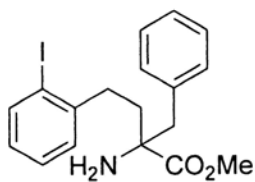
Sample Name : 35678M(AD-H,5%)
 Tray# : 1
 Vial# : 13
 Injection Volume : 5
 Data File : 35678M(AD-H,5%).lcd
 Method File : YWQ2013.lcm
 Report Format File : Templates.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013-3-31 9:32:06
 Date Processed : 2013-3-31 10:25:39

mAU



PDA Ch1 230nm

NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	13.562	126780	2334820	50.018	--
2	19.318	89493	2333127	49.982	9.738



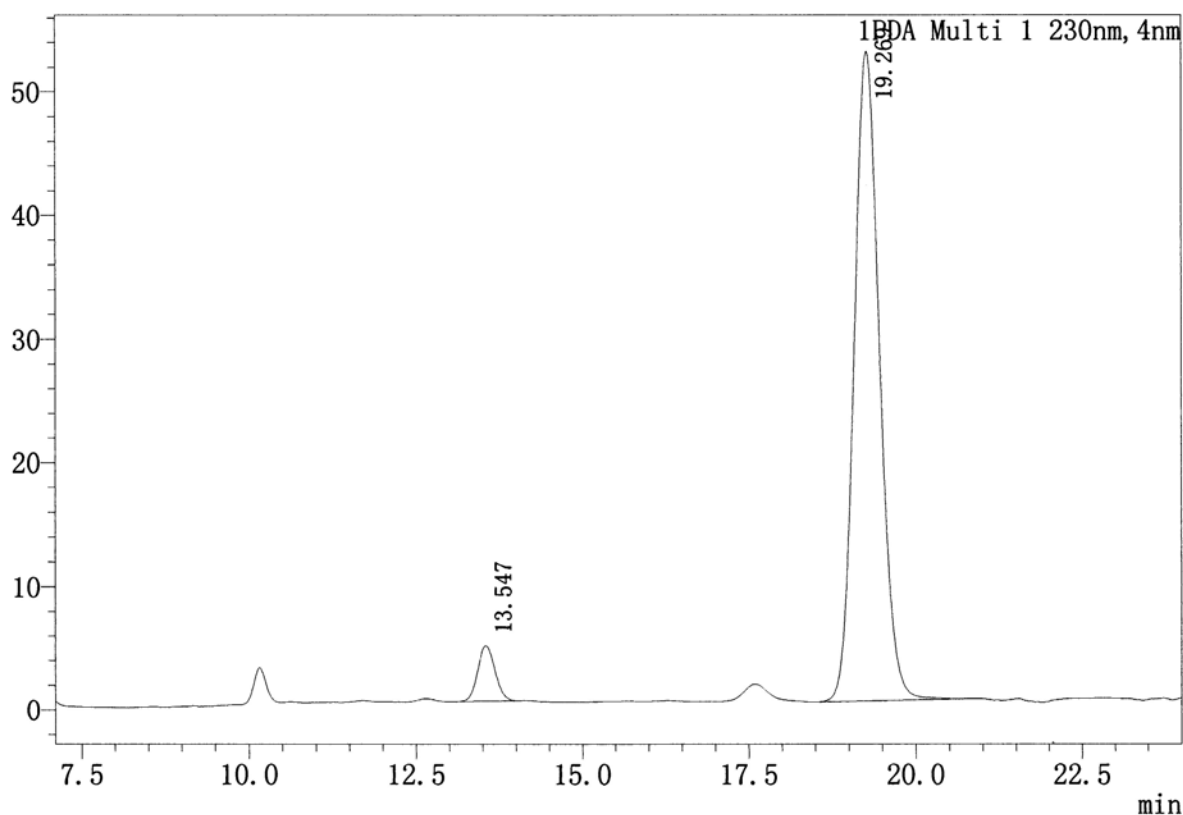
(rac)-3a

Data Report

Sample Information

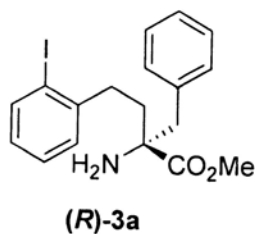
Sample Name : 35681C-M(AD-H,5%)
 Tray# : 1
 Vial# : 15
 Injection Volume : 6
 Data File : 35681C-M(AD-H,5%)).lcd
 Method File : YWQ2013.lcm
 Report Format File : Templates.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013-3-31 9:58:38
 Date Processed : 2013-3-31 10:37:31

mAU



PDA Ch1 230nm

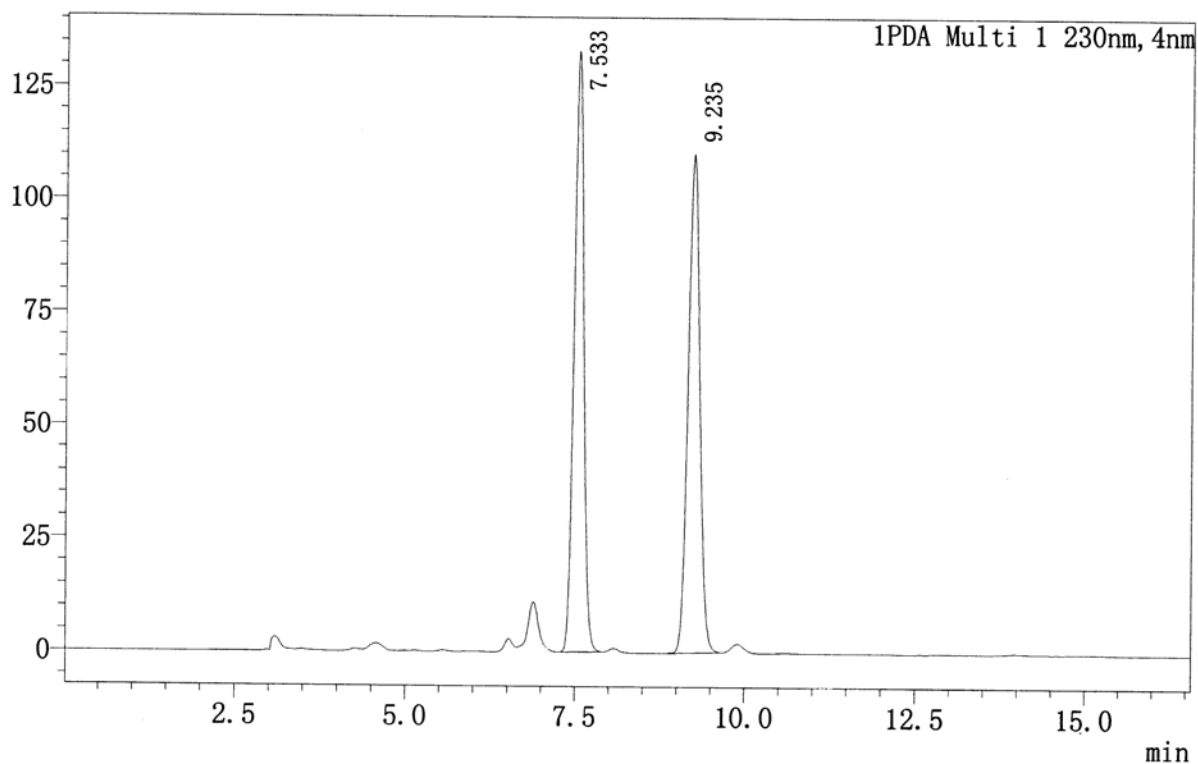
NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	13.547	4498	81752	5.585	--
2	19.269	52515	1381953	94.415	9.661



Data Report

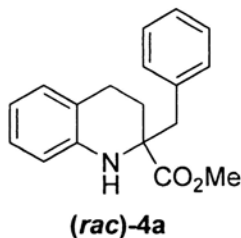
Sample Information
 Sample Name : 35678P(AD-H,5%)
 Tray# : 1
 Vial# : 12
 Injection Volume : 5
 Data File : 35678P(AD-H,5%).lcd
 Method File : YWQ2013.lcm
 Report Format File : Templates.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013-3-31 8:58:04
 Date Processed : 2013-3-31 10:42:50

mAU



PDA Ch1 230nm

NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	7.533	132964	1315396	50.000	--
2	9.235	110402	1315375	50.000	5.684

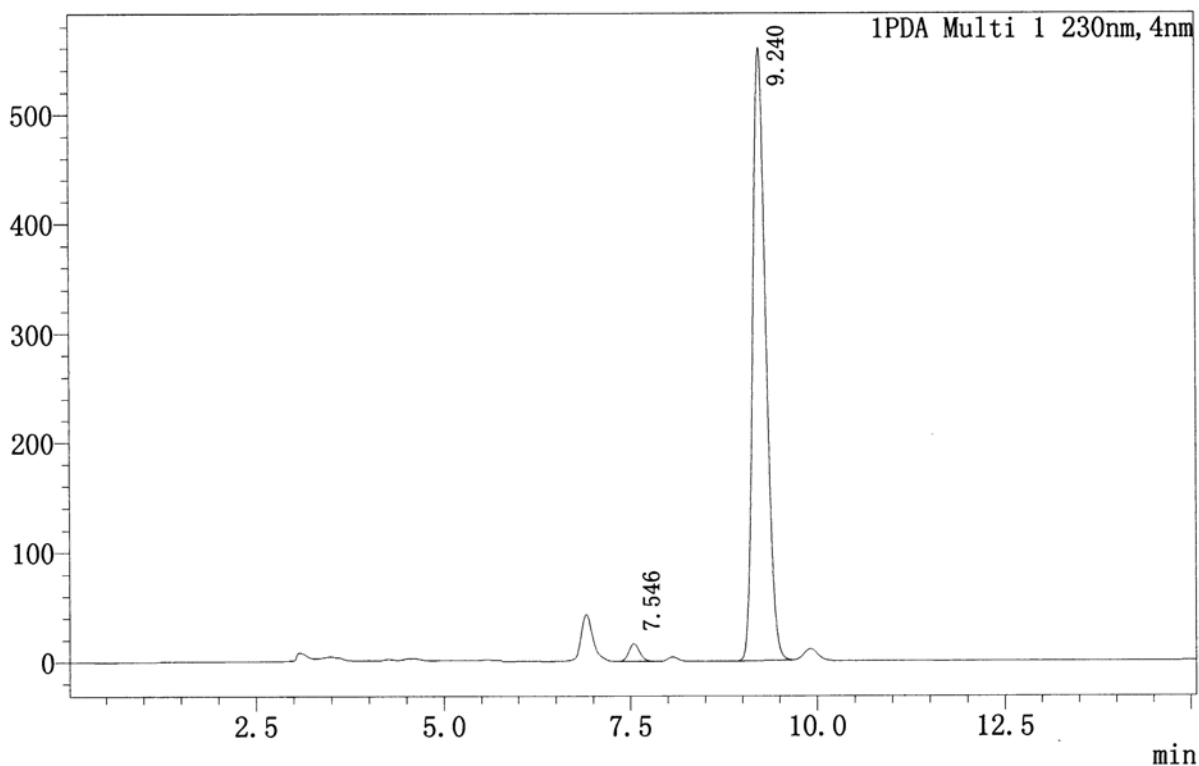


Data Report

Sample Information

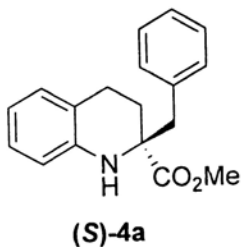
Sample Name : 35681C-P(AD-H,5%)
 Tray# : 1
 Vial# : 14
 Injection Volume : 6
 Data File : 35681C-P(AD-H,5%).lcd
 Method File : YWQ2013.lcm
 Report Format File : Templates.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013-3-31 9:16:02
 Date Processed : 2013-3-31 10:42:15

mAU



PDA Ch1 230nm

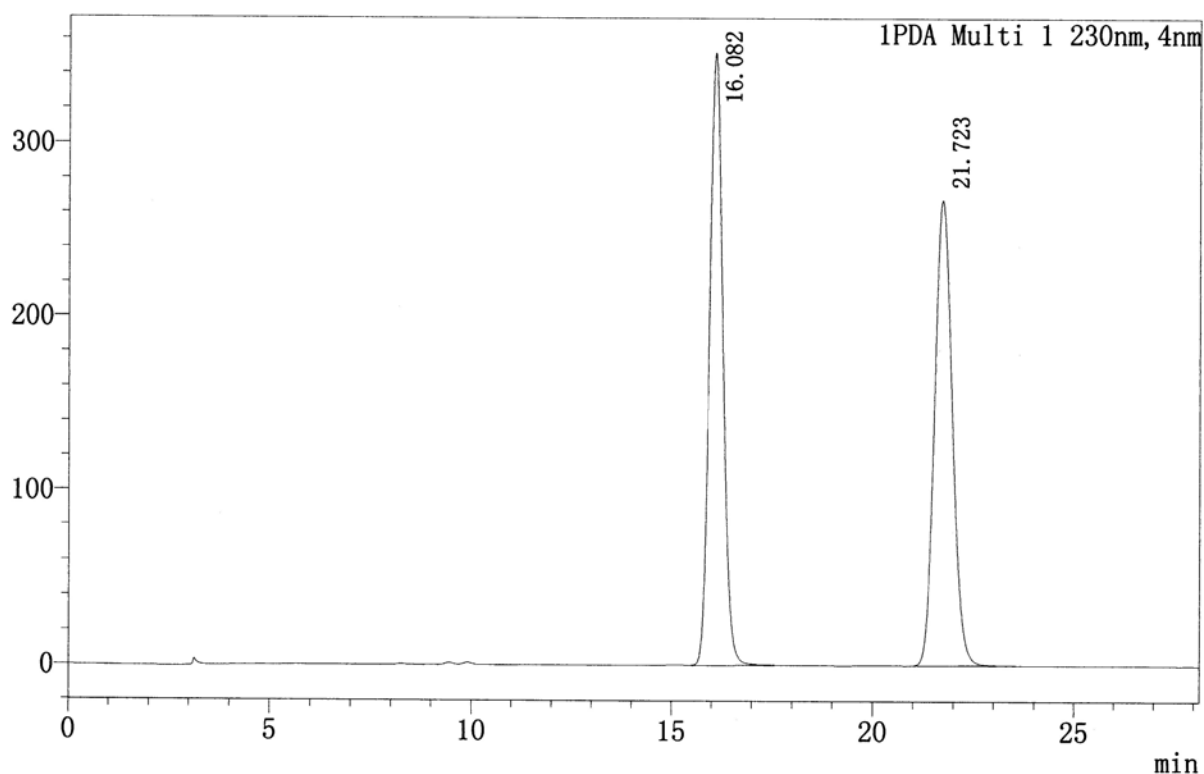
NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	7.546	16280	162262	2.339	--
2	9.240	559777	6773714	97.661	5.582



Data Report

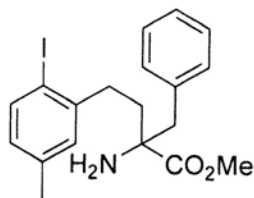
Sample Information
 Sample Name : Me-M(RS),AD-H,3%
 Tray# : 1
 Vial# : 1
 Injection Volume : 5
 Data File : Me-M(RS),AD-H,3%2.lcd
 Method File : 3%30min.lcm
 Report Format File : Templates.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013/5/13 18:45:36
 Date Processed : 2013/5/13 19:13:45

mAU



PDA Ch1 230nm

NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	16.082	351948	8165751	49.965	--
2	21.723	267332	8177350	50.035	7.943



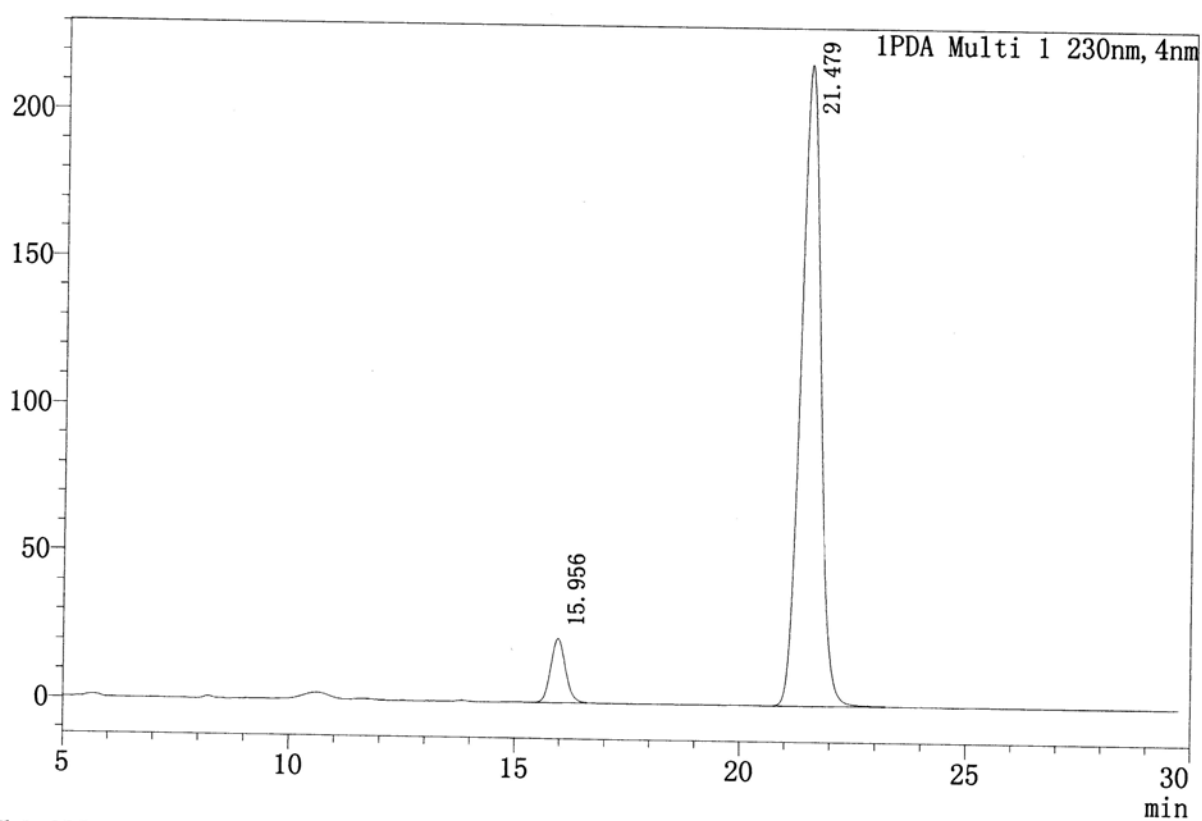
(rac)-3b

Data Report

Sample Information

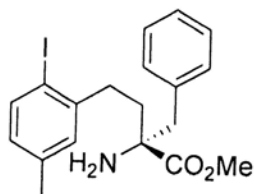
Sample Name : 35722-M,AD-H,3%
 Tray# : 1
 Vial# : 2
 Injection Volume : 6
 Data File : 35722-M,AD-H,3%.lcd
 Method File : 3%30min.lcm
 Report Format File : Templates.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013/5/13 17:06:48
 Date Processed : 2013/5/13 17:36:35

mAU



PDA Ch1 230nm

NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	15.956	21764	496596	6.987	--
2	21.479	217831	6610375	93.013	7.854



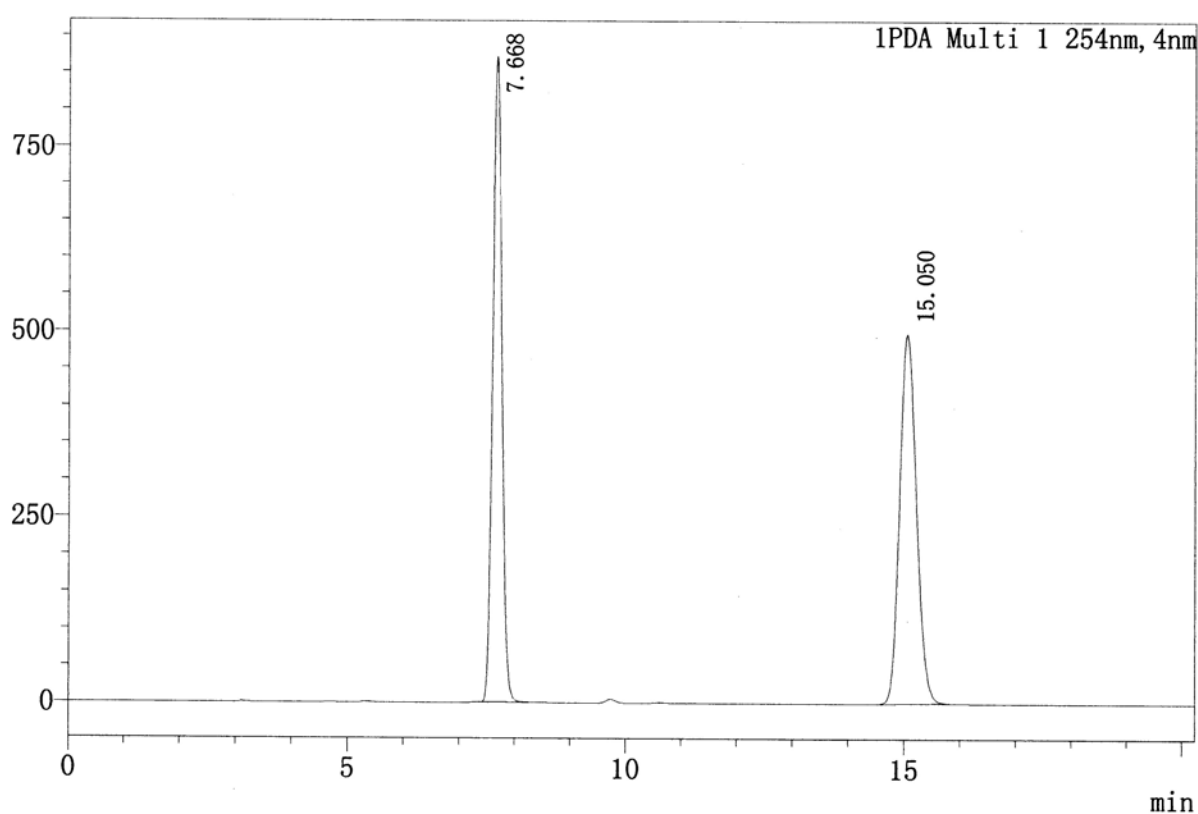
(R)-3b

Data Report

Sample Information

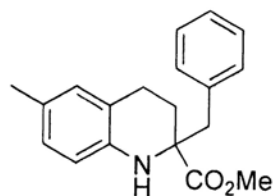
Sample Name : Me-P(RS),AD-H,3%
 Tray# : 1
 Vial# : 5
 Injection Volume : 8
 Data File : Me-P(RS),AD-H,3%3.lcd
 Method File : 3%30min.lcm
 Report Format File : Templates.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013/5/15 13:26:08
 Date Processed : 2013/5/15 13:46:23

mAU



PDA Ch1 254nm

NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	7.668	871484	10261549	49.720	--
2	15.050	497819	10377163	50.280	16.776



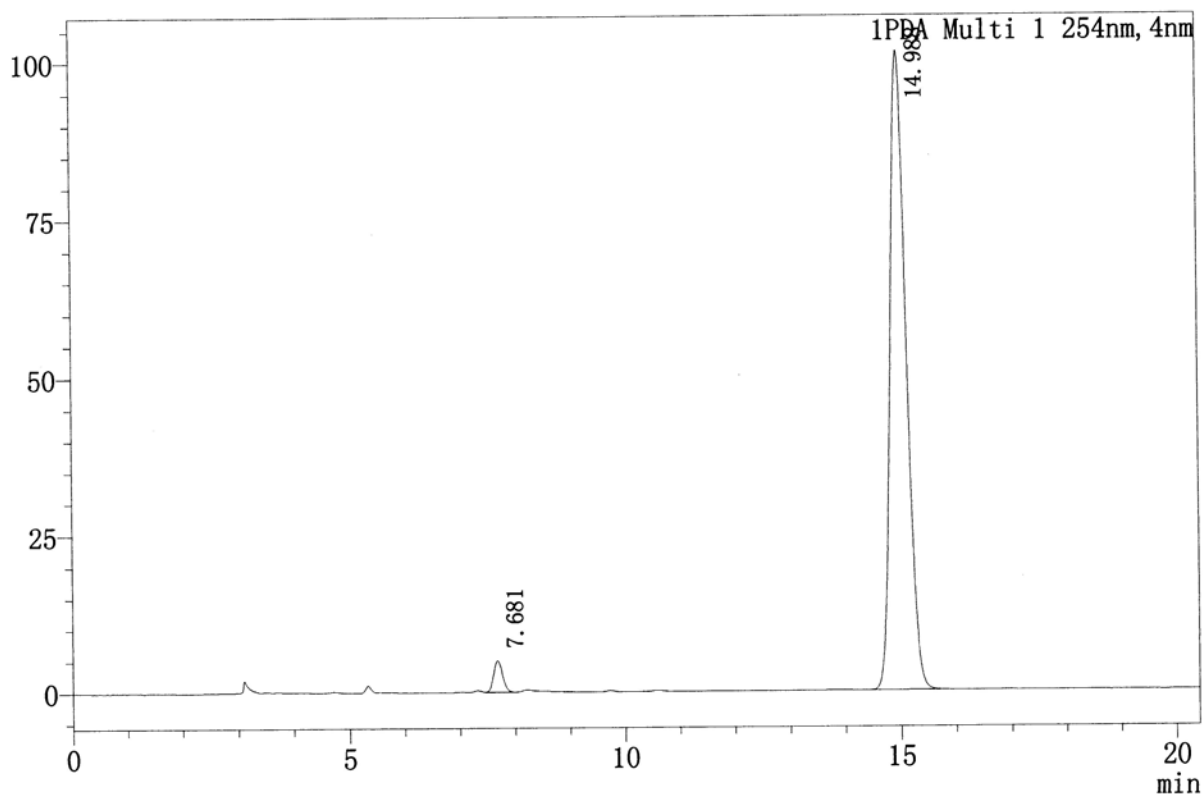
(rac)-4b

Data Report

Sample Information

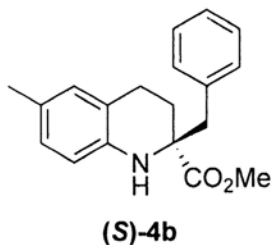
Sample Name : 35722-P,AD-H,3%
 Tray# : 1
 Vial# : 4
 Injection Volume : 7
 Data File : 35722-P',AD-H,3%.lcd
 Method File : 3%30min.lcm
 Report Format File : Templates.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013/5/13 19:36:14
 Date Processed : 2013/5/14 12:49:52

mAU



PDA Ch1 254nm

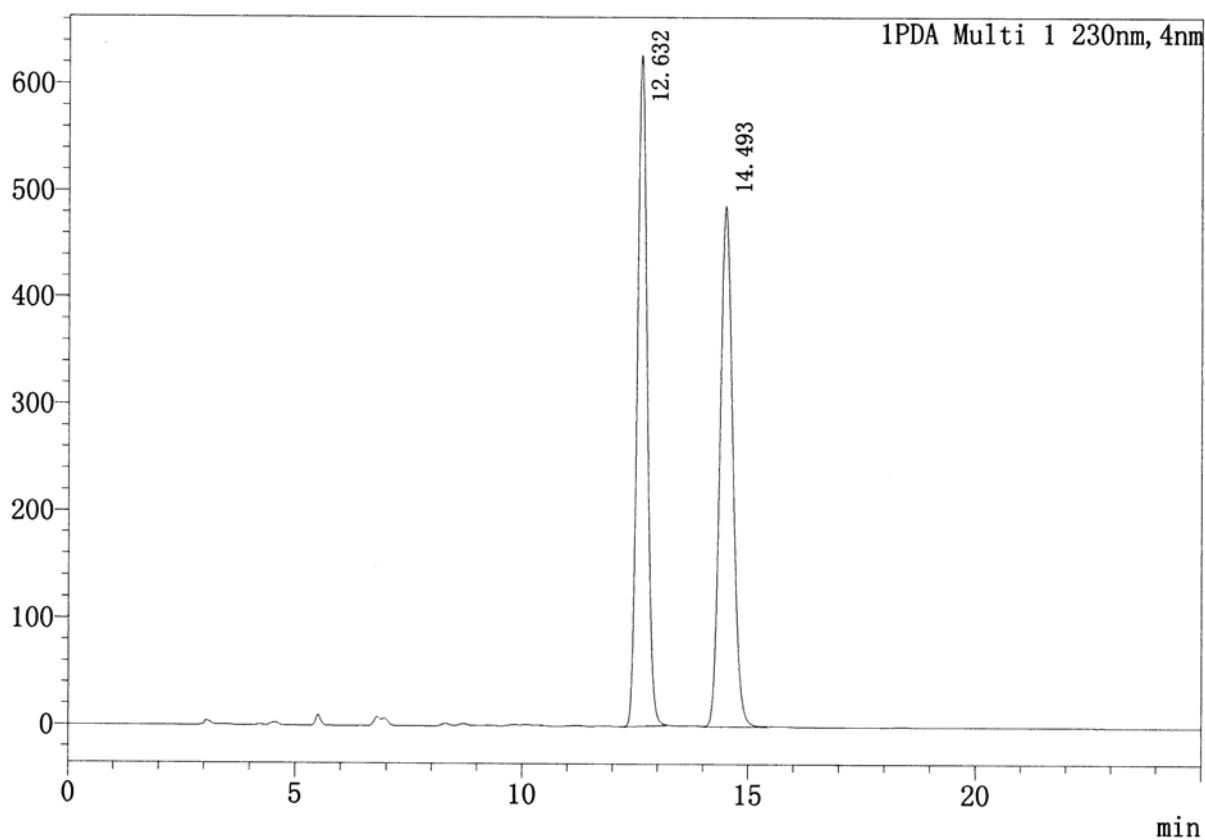
NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	7.681	5044	56160	2.681	--
2	14.988	101453	2038685	97.319	17.274



Data Report

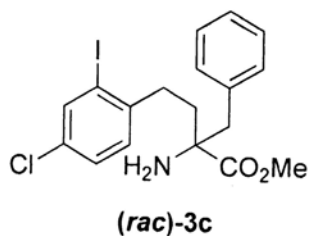
Sample Information
 Sample Name : 35708M, AD-H,5%
 Tray# : 1
 Vial# : 91
 Injection Volume : 5
 Data File : 35708M', AD-H,5%.lcd
 Method File : 5%30min.lcm
 Report Format File : Templates.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013-5-6 16:52:41
 Date Processed : 2013-5-6 17:17:47

mAU



PDA Ch1 230nm

NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	12.632	627794	9588696	49.723	--
2	14.493	487558	9695716	50.277	3.961

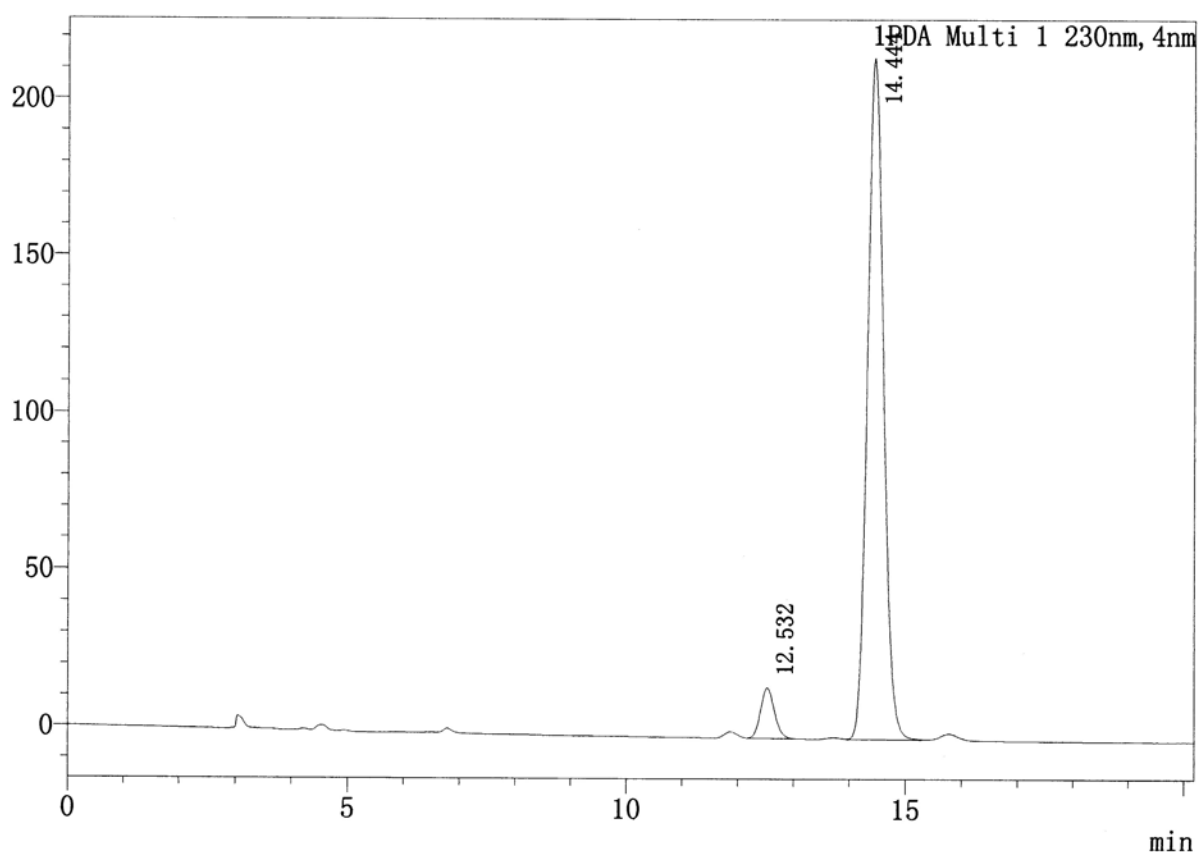


Data Report

Sample Information

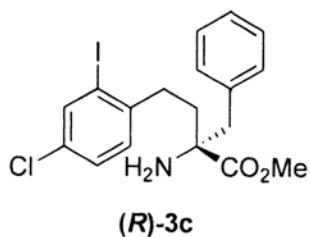
Sample Name : 35717A-M, AD-H,5%
 Tray# : 1
 Vial# : 76
 Injection Volume : 5
 Data File : 35717A-M, AD-H,5%.lcd
 Method File : 5%30min.lcm
 Report Format File : Templates.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013-5-6 16:30:32
 Date Processed : 2013-5-6 16:50:44

mAU



PDA Ch1 230nm

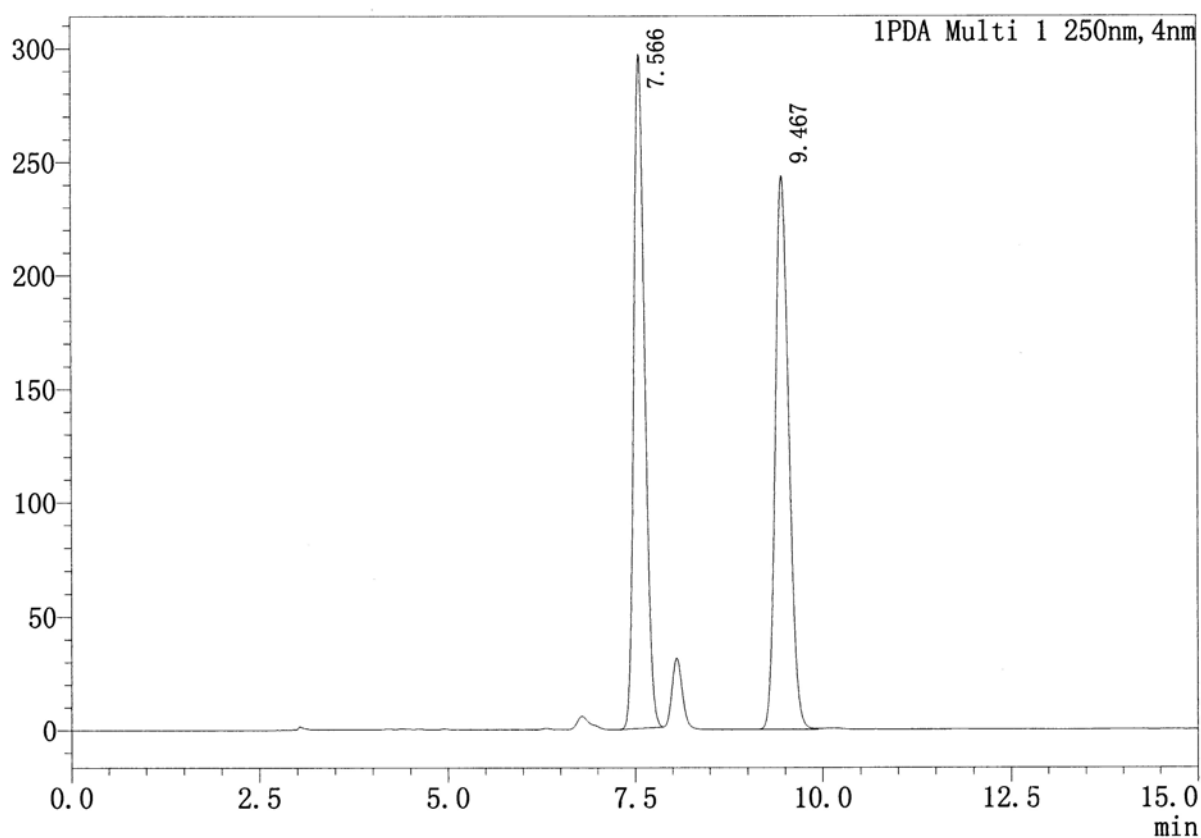
NO.	Ret. Time	Height(uAU)	Area(uAU*min)	Rel. Area %	Resolution(USP)
1	12.532	16143	276550	5.988	--
2	14.444	217156	4342015	94.012	3.856



Data Report

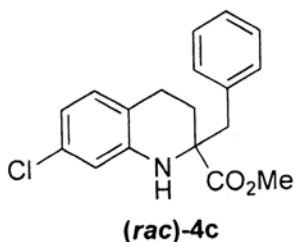
Sample Information
Sample Name : 35708P, AD-H,5%
Tray# : 1
Vial# : 78
Injection Volume : 5
Data File : 35708P', AD-H,5%2.lcd
Method File : 5%30min.lcm
Report Format File : Templates.lsr
Sample Type : Unknown
Acquired by : System Administrator
Date Acquired : 2013-5-7 16:04:49
Date Processed : 2013-5-7 16:34:13

mAU



PDA Ch1 250nm

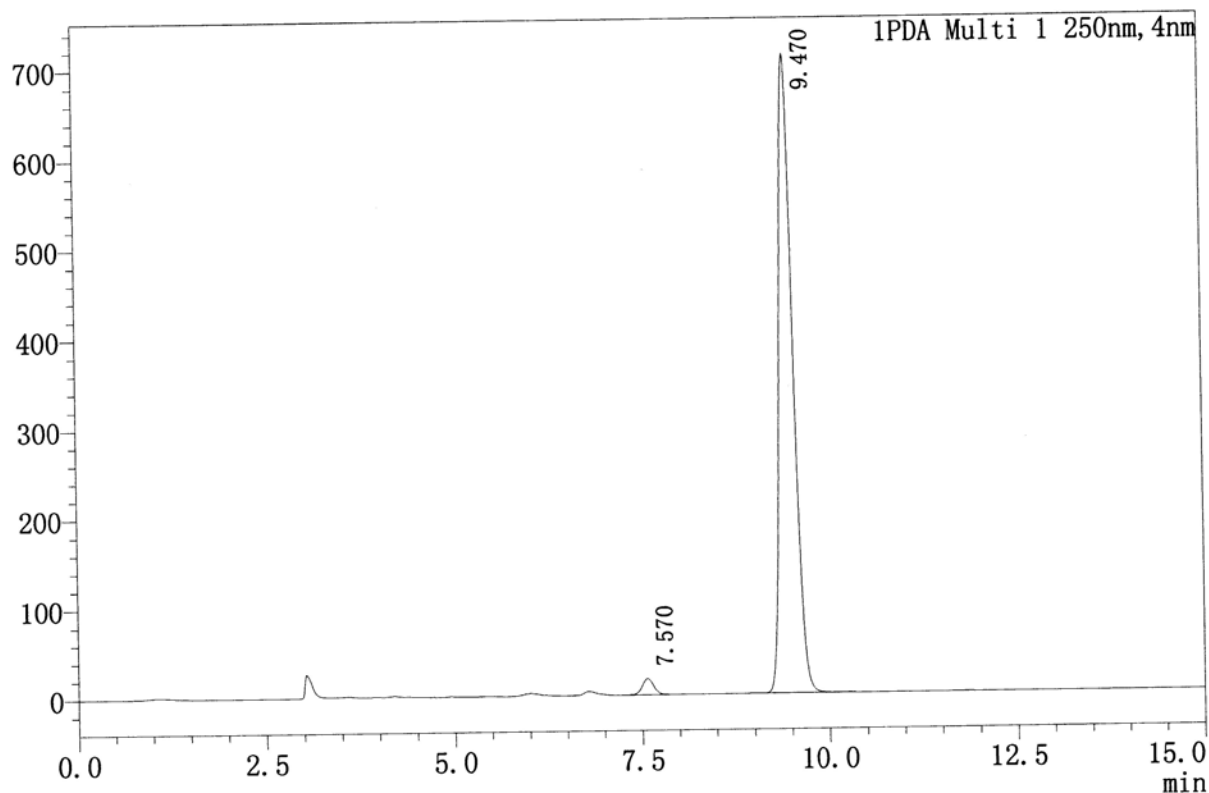
NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	7.566	296550	3006140	49.702	--
2	9.467	243484	3042154	50.298	6.133



Data Report

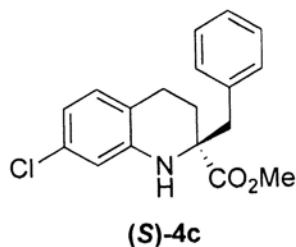
Sample Information
 Sample Name : 35717A-P, AD-H,5%
 Tray# : 1
 Vial# : 77
 Injection Volume : 7
 Data File : 35717A-P, AD-H,5%.lcd
 Method File : 5%30min.lcm
 Report Format File : Templates.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013-5-6 17:37:27
 Date Processed : 2013-5-6 18:02:30

mAU



PDA Ch1 250nm

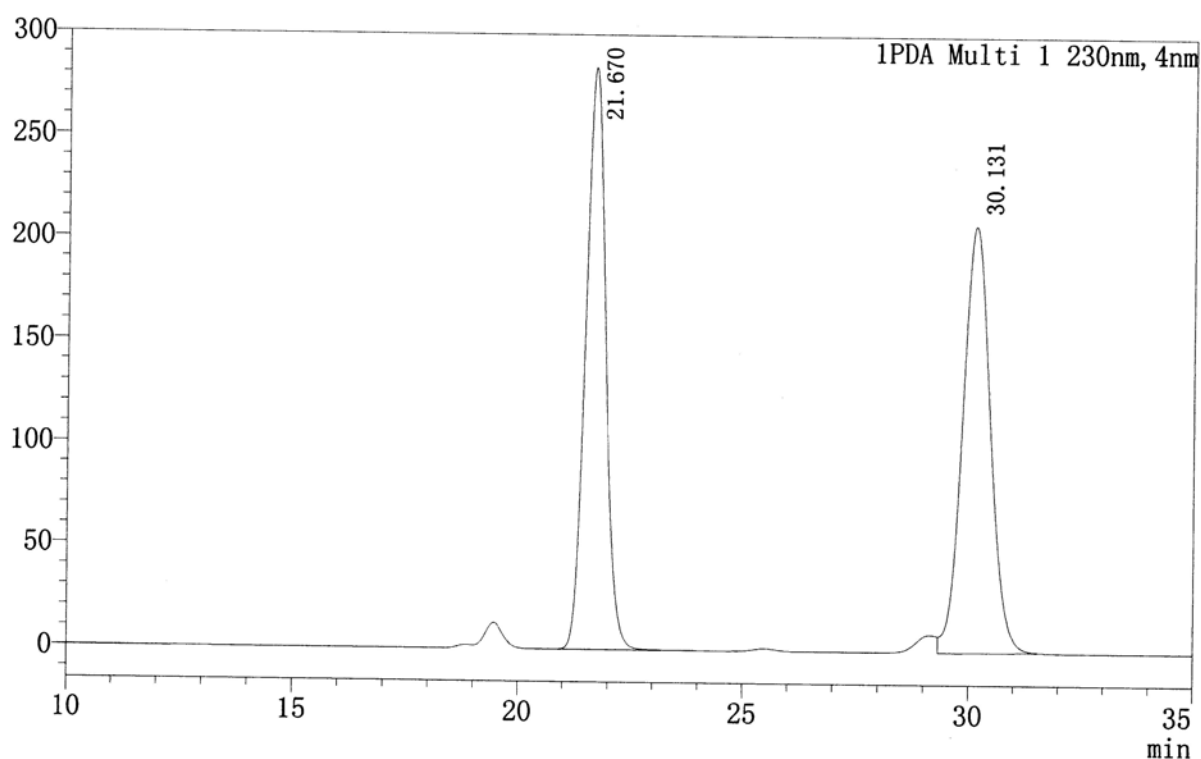
NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	7.570	18157	194957	2.092	---
2	9.470	712179	9125952	97.908	5.923



Data Report

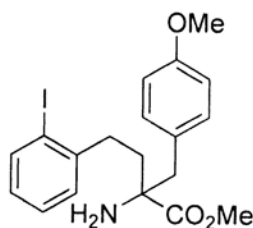
Sample Information
 Sample Name : 199725M(AD-H,4%)
 Tray# : 1
 Vial# : 5
 Injection Volume : 8
 Data File : 199725M(AD-H,4%).lcd
 Method File : YWQ2013.lcm
 Report Format File : Templates.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013/3/31 16:14:46
 Date Processed : 2013/3/31 17:01:54

mAU



PDA Ch1 230nm

NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	21.670	284042	8802228	49.733	--
2	30.131	208167	8896673	50.267	8.729



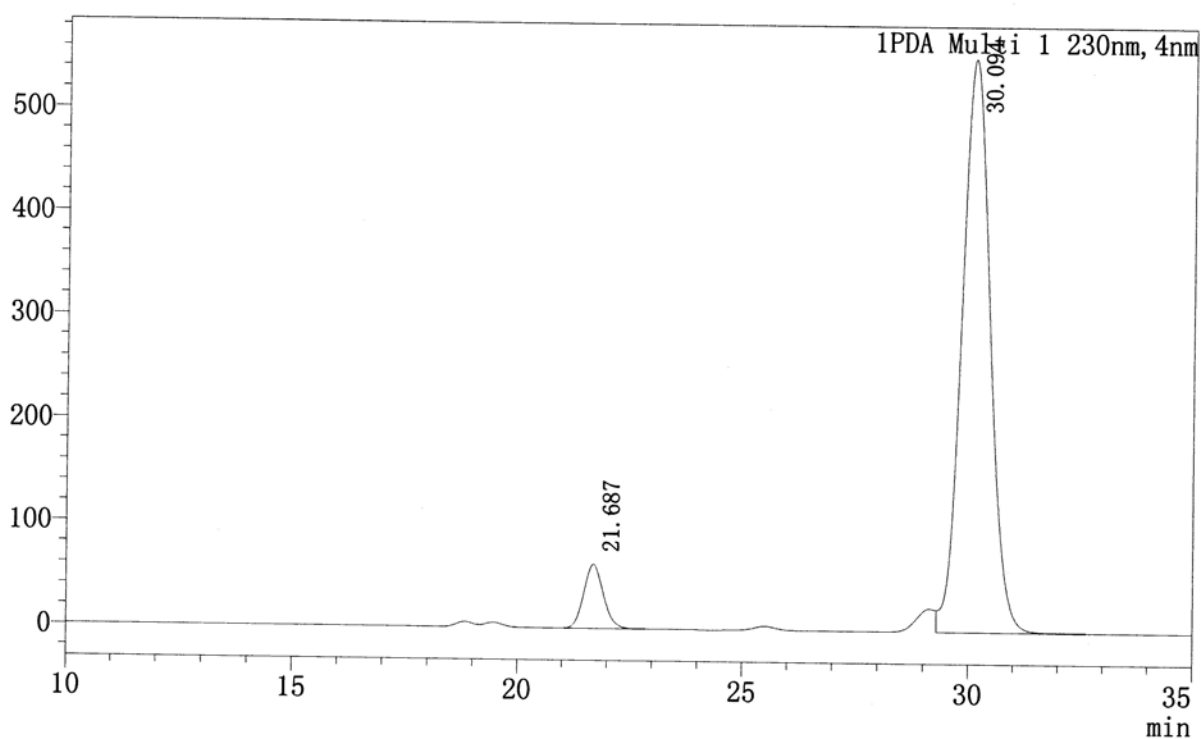
(rac)-3d

Data Report

Sample Information

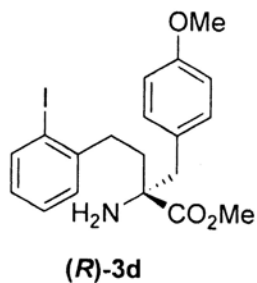
Sample Name : 35683B-M(AD-H,4%)
 Tray# : 1
 Vial# : 4
 Injection Volume : 8
 Data File : 35683B-M(AD-H,4%).lcd
 Method File : YWQ2013.lcm
 Report Format File : Templates.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013/3/31 15:37:25
 Date Processed : 2013/3/31 17:12:59

mAU



PDA Ch1 230nm

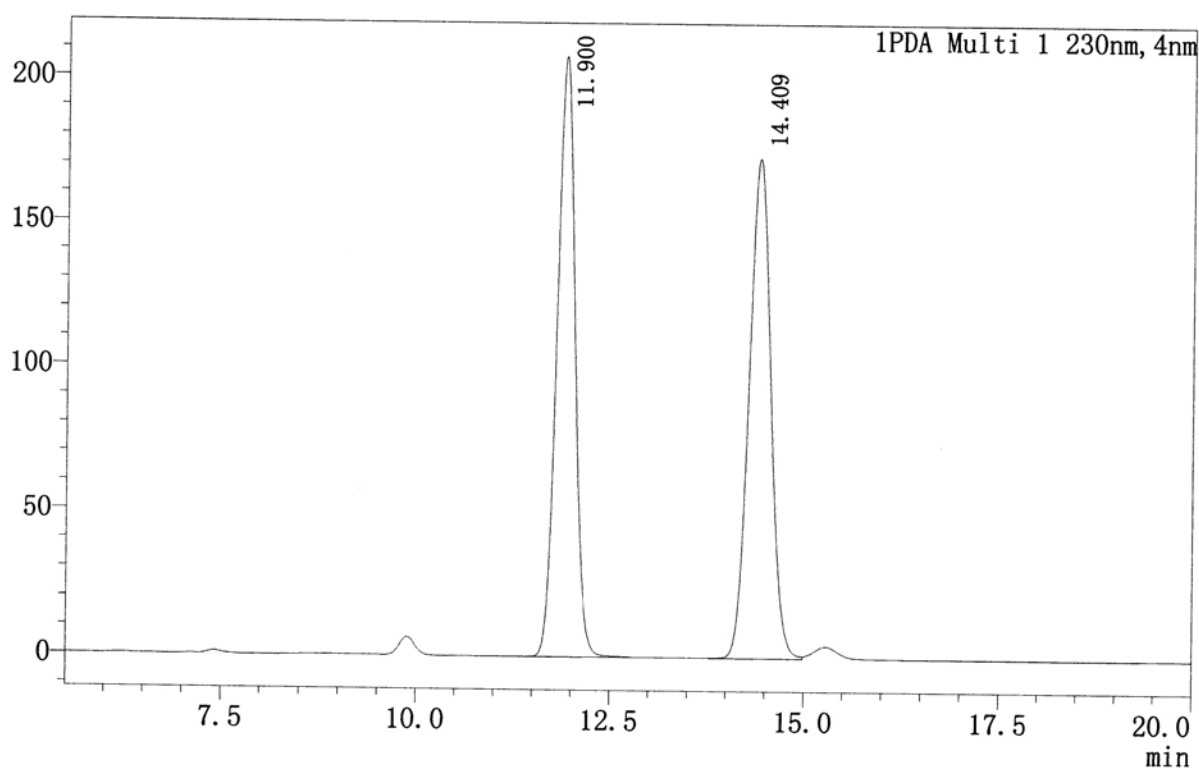
NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	21.687	61908	1913819	7.334	--
2	30.094	553681	24181995	92.666	8.594



Data Report

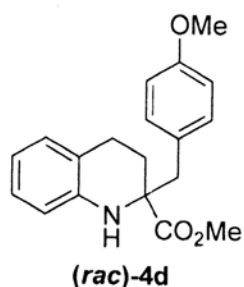
Sample Information
 Sample Name : 199725P(AD-H,4%)
 Tray# : 1
 Vial# : 6
 Injection Volume : 8
 Data File : 199725P(AD-H,4%).lcd
 Method File : YWQ2013.lcm
 Report Format File : Templates.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013/3/31 17:12:59
 Date Processed : 2013/3/31 17:39:27

mAU



PDA Ch1 230nm

NO.	Ret. Time	Height(uAU)	Area(uAU*min)	Rel. Area %	Resolution(USP)
1	11.900	207606	3361186	49.987	--
2	14.409	173204	3362965	50.013	5.266

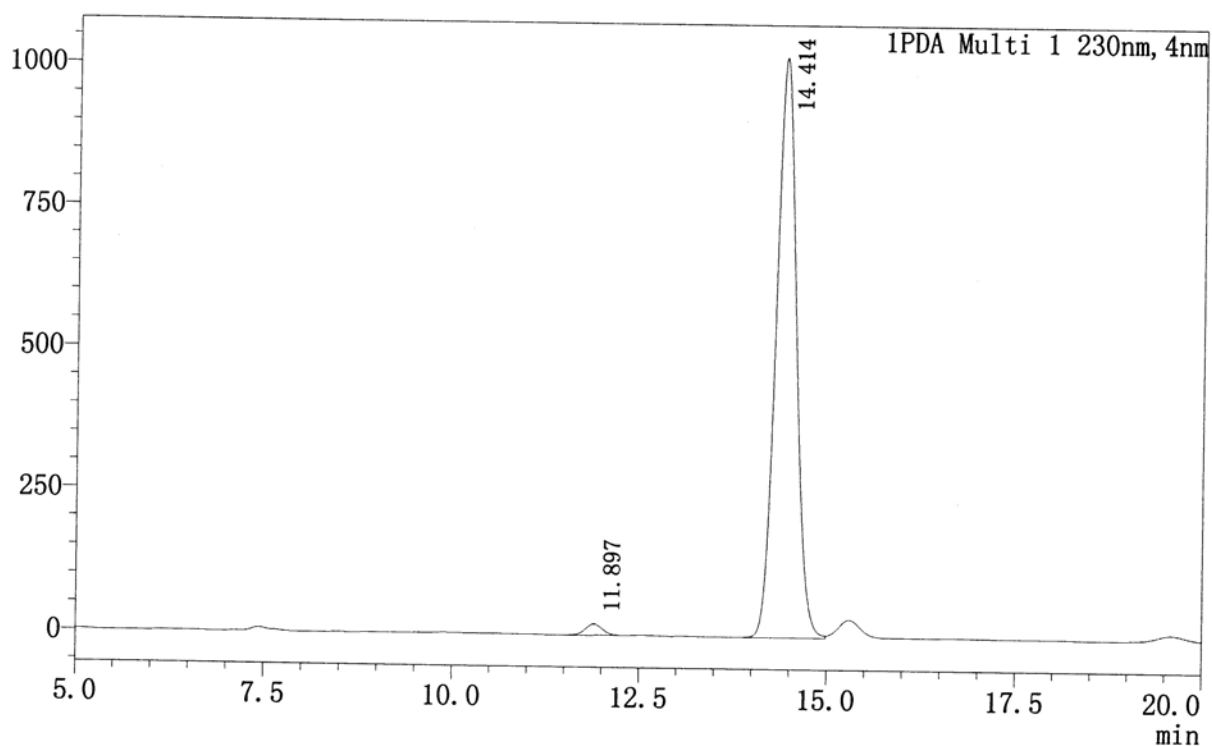


Data Report

Sample Information

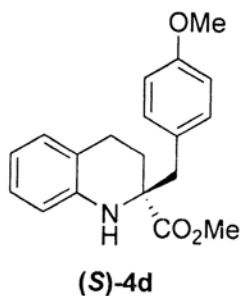
Sample Name : 35683B-P(AD-H,4%)
 Tray# : 1
 Vial# : 3
 Injection Volume : 8
 Data File : 35683B-P(AD-H,4%).lcd
 Method File : YWQ2013.lcm
 Report Format File : Templates.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013/3/31 16:51:55
 Date Processed : 2013/3/31 17:33:31

mAU



PDA Ch1 230nm

NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution(USP)
1	11.897	19294	303845	1.561	--
2	14.414	1020619	19159272	98.439	5.420

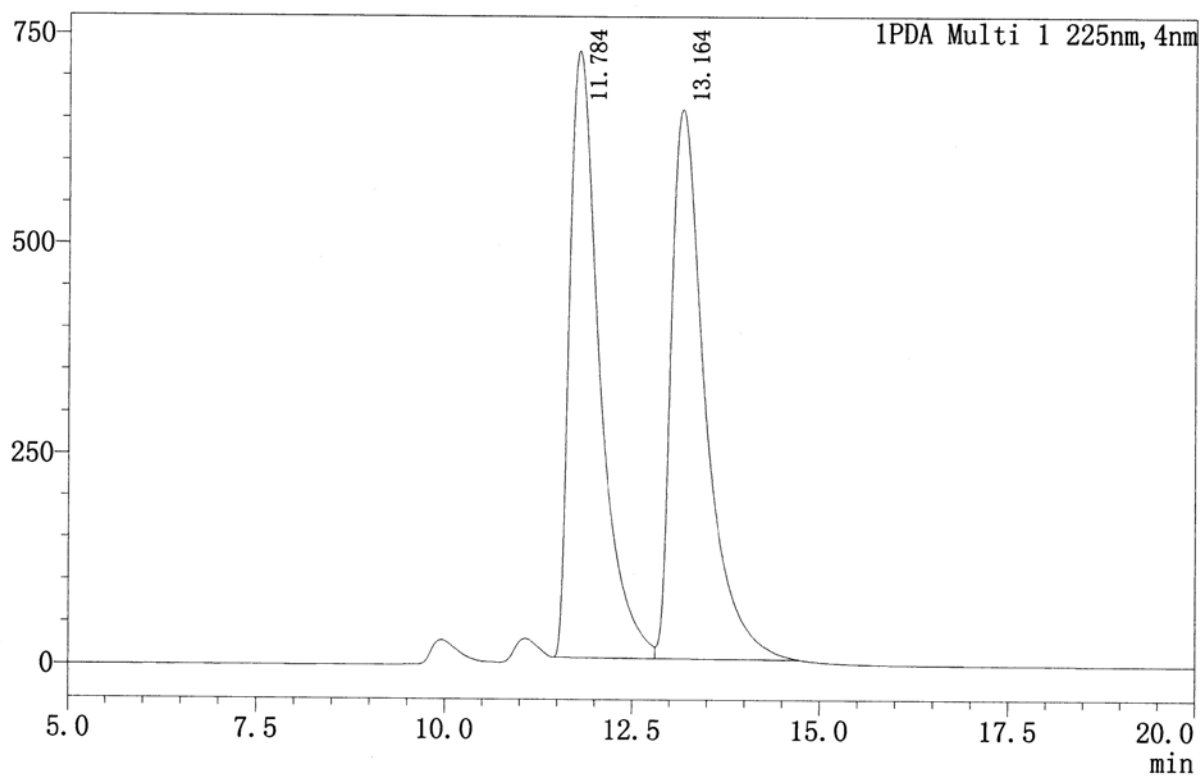


Data Report

Sample Information

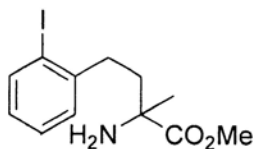
Sample Name : 35723MRS,5%OD
 Tray# : 1
 Vial# : 64
 Injection Volume : 6
 Data File : 35723MRS',5%OD,5%1.lcd
 Method File : 5%20min.lcm
 Report Format File : Templates.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013/5/16 23:33:46
 Date Processed : 2013/5/17 10:02:47

mAU



PDA Ch1 225nm

NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	11.784	721883	20241545	49.590	--
2	13.164	653478	20575924	50.410	1.904



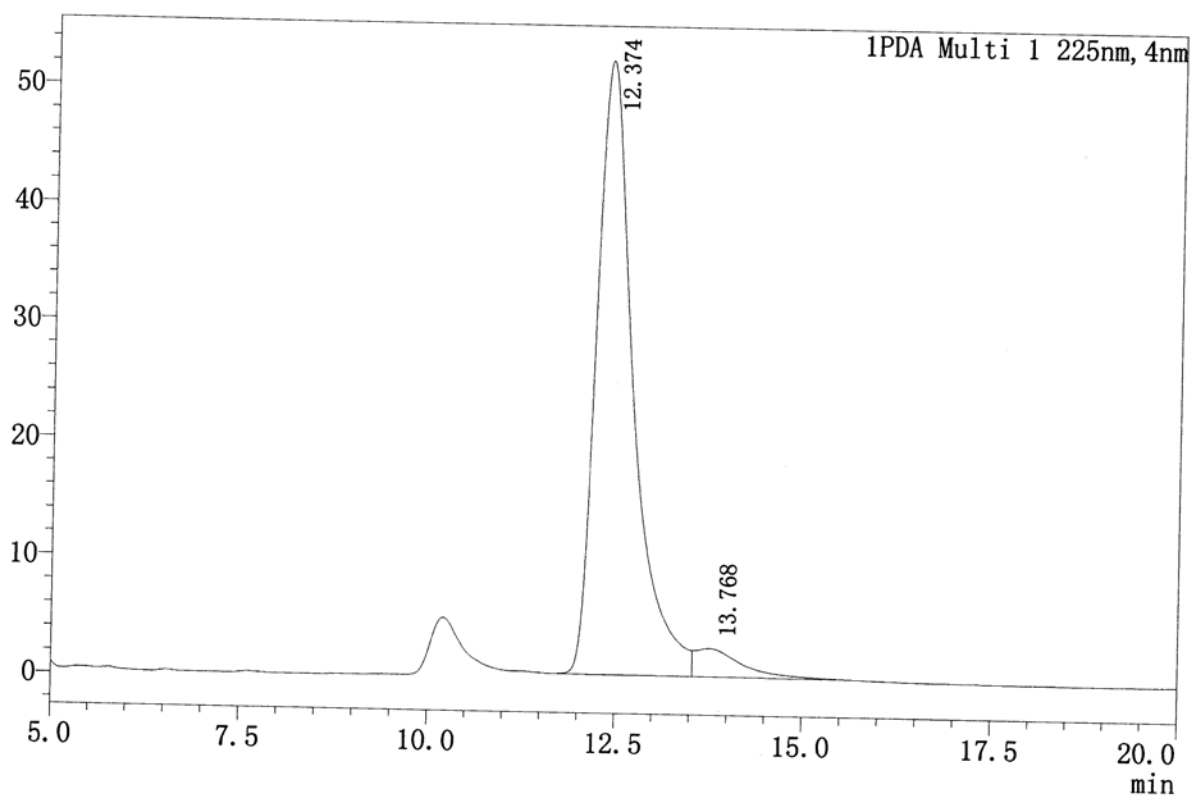
(rac)-3e

Data Report

Sample Information

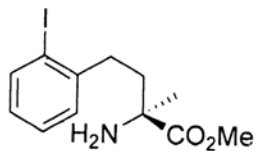
Sample Name : 35723E-M,OD5%
 Tray# : 1
 Vial# : 66
 Injection Volume : 7
 Data File : 35723E-M',OD-H,5%2.lcd
 Method File : 5%20min.lcm
 Report Format File : Templates.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013/5/15 22:37:49
 Date Processed : 2013/5/17 10:24:41

mAU



PDA Ch1 225nm

NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	12.374	51985	1788872	94.486	--
2	13.768	2389	104394	5.514	0.859

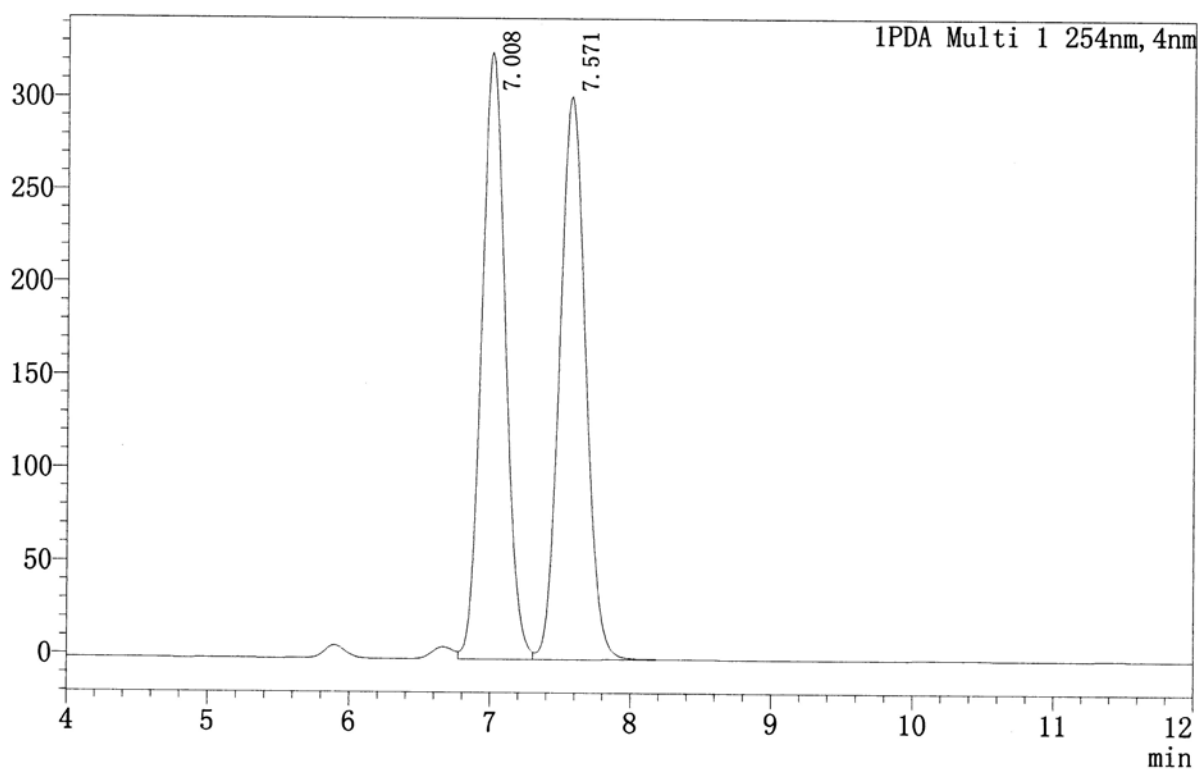


(S)-3e

Data Report

Sample Information
Sample Name : 35723P(RS),OD-H,5%
Tray# : 1
Vial# : 65
Injection Volume : 7
Data File : 35723P(RS),OD-H,5%2.lcd
Method File : 5%20min.lcm
Report Format File : Templates.lsr
Sample Type : Unknown
Acquired by : System Administrator
Date Acquired : 2013/5/17 11:21:46
Date Processed : 2013/5/17 11:55:31

mAU



PDA Ch1 254nm

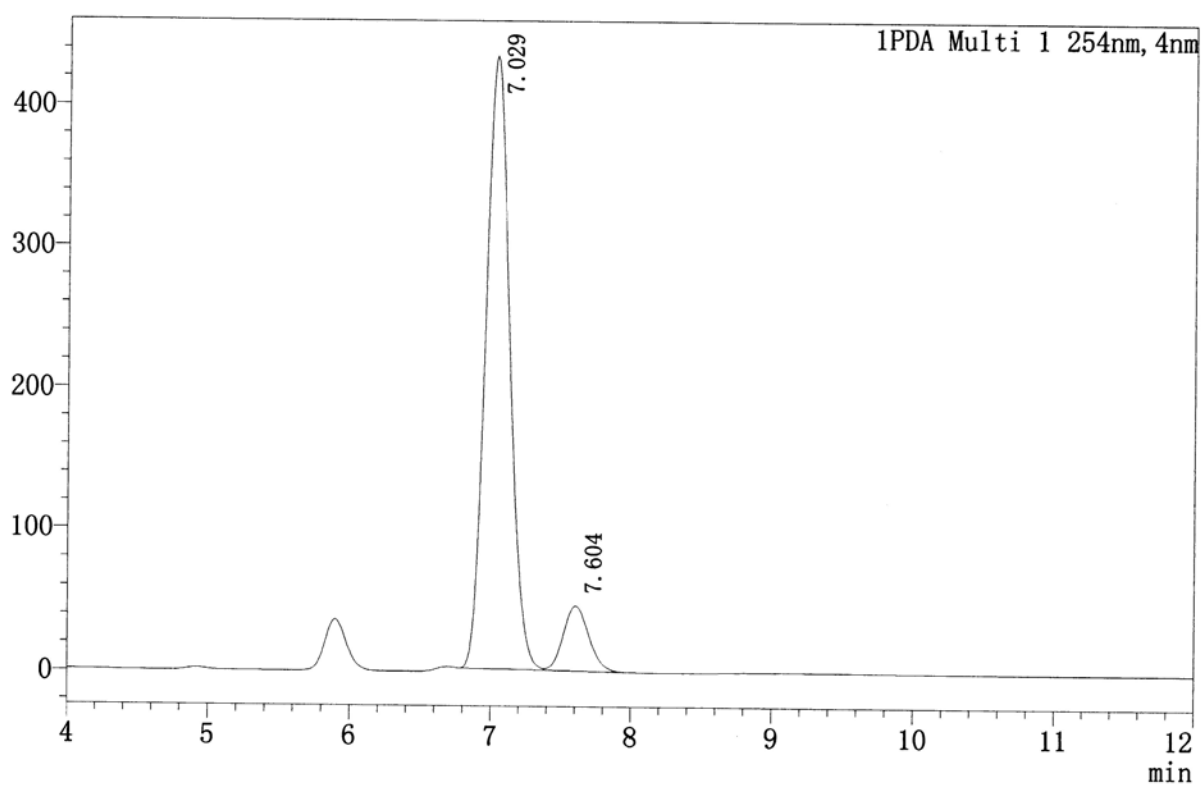
NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	7.008	326882	3858534	49.806	--
2	7.571	303265	3888619	50.194	1.681



Data Report

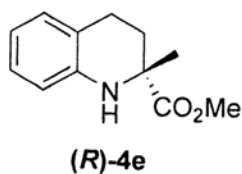
Sample Information
 Sample Name : 35723E-P,OD-H,5%
 Tray# : 1
 Vial# : 62
 Injection Volume : 8
 Data File : 35723E-P,OD-H,5%1.lcd
 Method File : 5%20min.lcm
 Report Format File : Templates.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013/5/17 11:56:41
 Date Processed : 2013/5/17 12:10:57

mAU



PDA Ch1 254nm

NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	7.029	433337	5183649	89.943	--
2	7.604	45944	579605	10.057	1.709

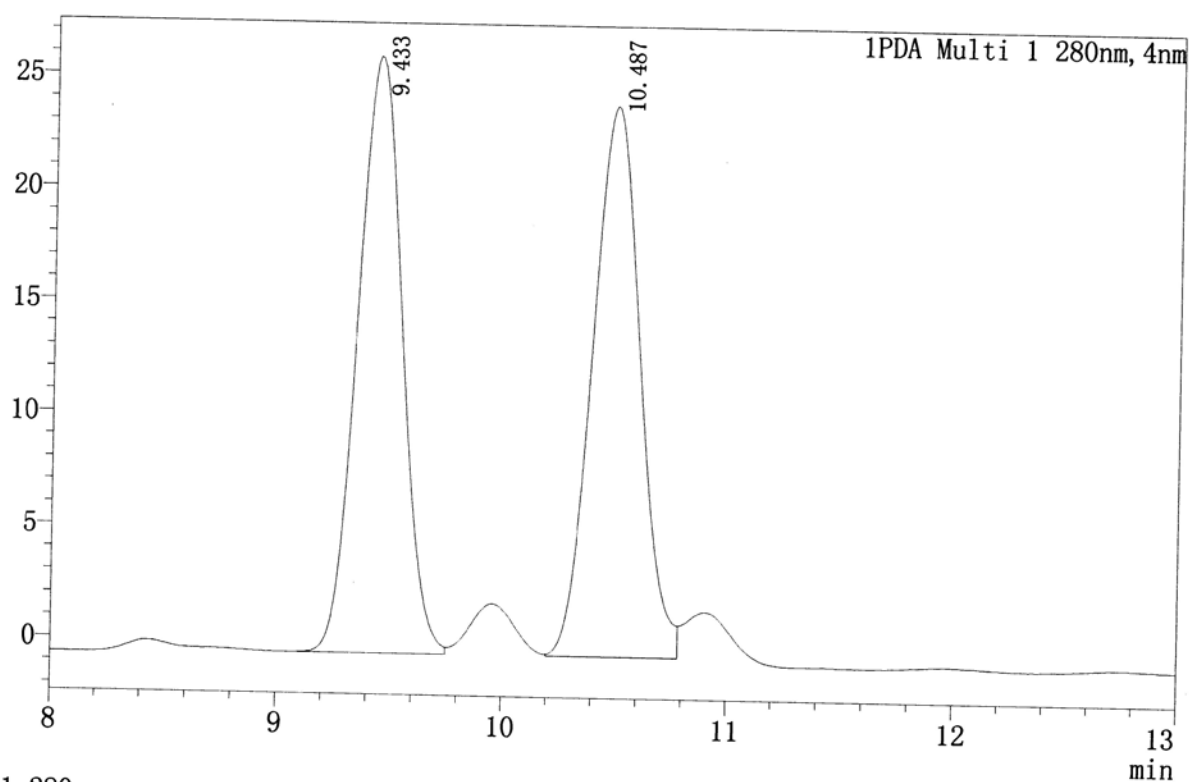


Data Report

Sample Information

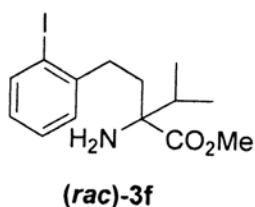
Sample Name : 35727-MRS,AD3%
 Tray# : 1
 Vial# : 68
 Injection Volume : 7
 Data File : 35727-MRS,AD3%,3%59.lcd
 Method File : 3%20min.lcm
 Report Format File : Templates.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013/5/21 10:35:54
 Date Processed : 2013/5/21 10:52:21

mAU



PDA Ch1 280nm

NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	9.433	26454	361702	50.141	--
2	10.487	24426	359674	49.859	2.737

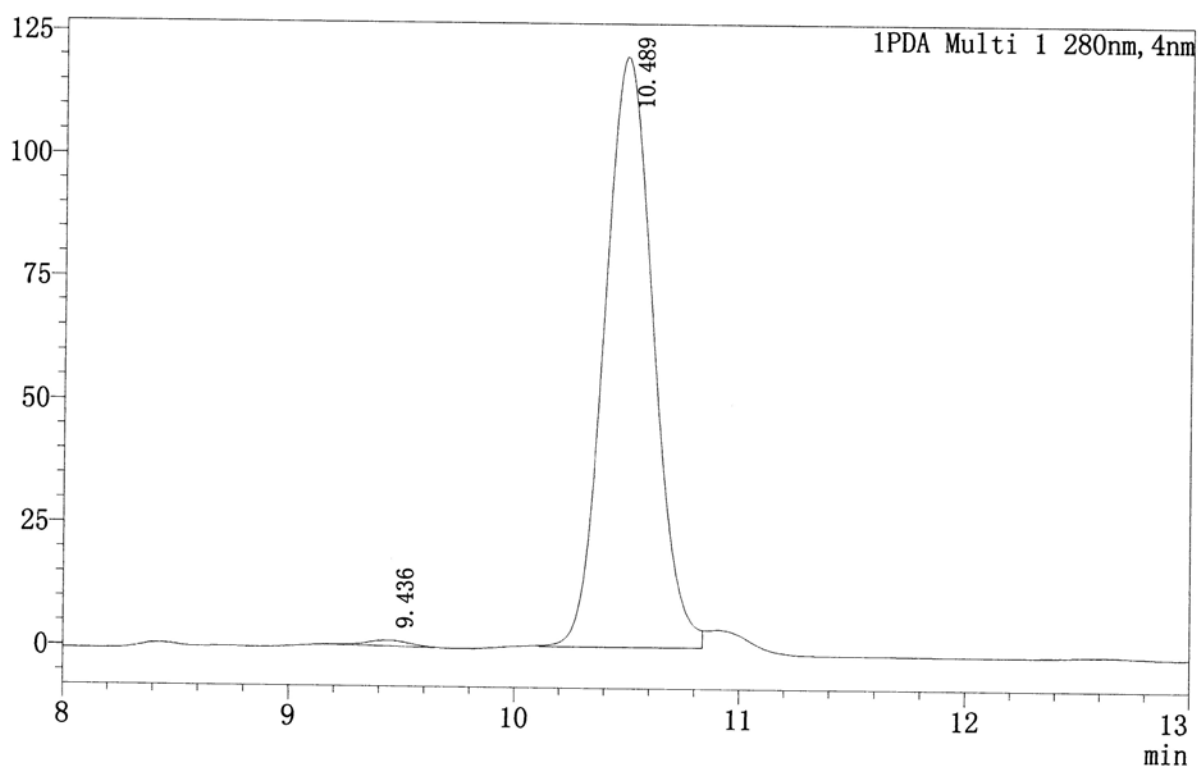


Data Report

Sample Information

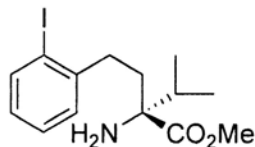
Sample Name : 35726-M,AD3%
 Tray# : 1
 Vial# : 8
 Injection Volume : 7
 Data File : 35726-M,AD3%,3%58.lcd
 Method File : 3%20min.lcm
 Report Format File : Templates.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013/5/21 10:21:51
 Date Processed : 2013/5/21 10:35:01

mAU



PDA Ch1 280nm

NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	9.436	1121	14564	0.797	--
2	10.489	119864	1812177	99.203	2.728

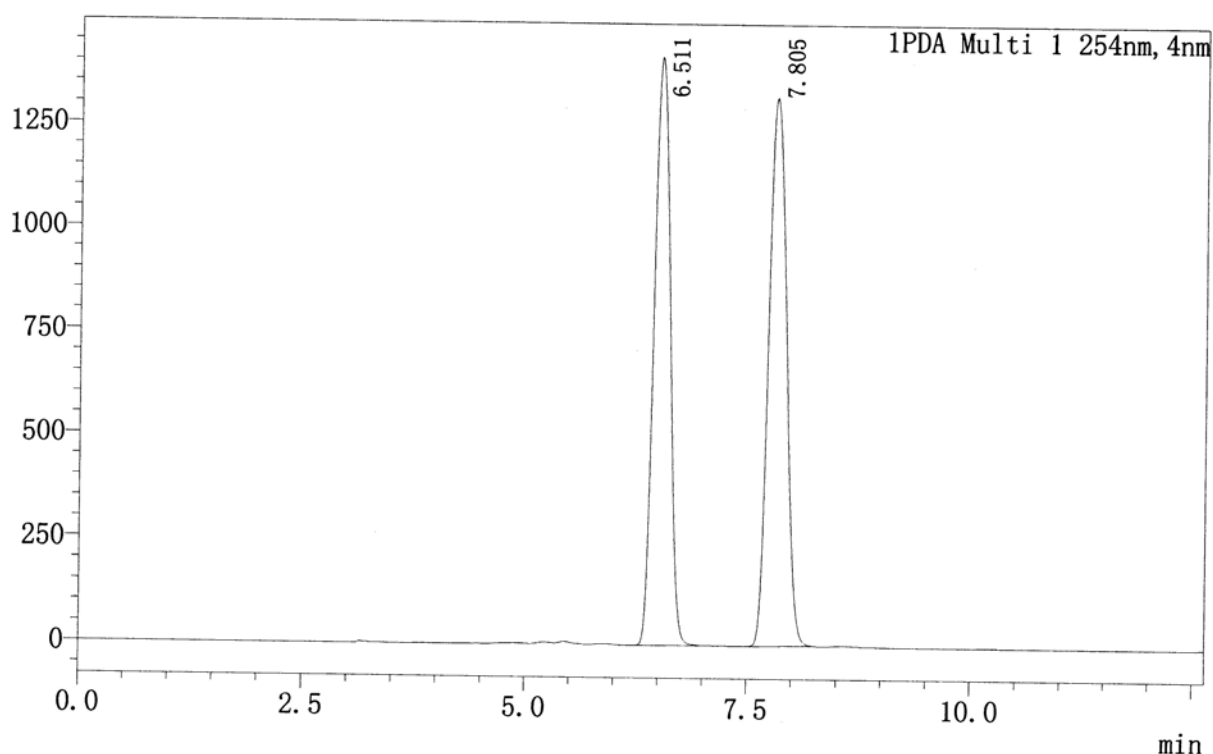


(R)-3f

Data Report

Sample Information
 Sample Name : 35727-PRS,AD3%
 Tray# : 1
 Vial# : 7
 Injection Volume : 15
 Data File : 35727-PRS,AD3%,3%33.lcd
 Method File : 3%20min.lcm
 Report Format File : Templates.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013/5/20 23:47:19
 Date Processed : 2013/5/21 0:00:00

mAU



PDA Ch1 254nm

NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	6.511	1416114	17878879	49.495	--
2	7.805	1319983	18243451	50.505	3.642

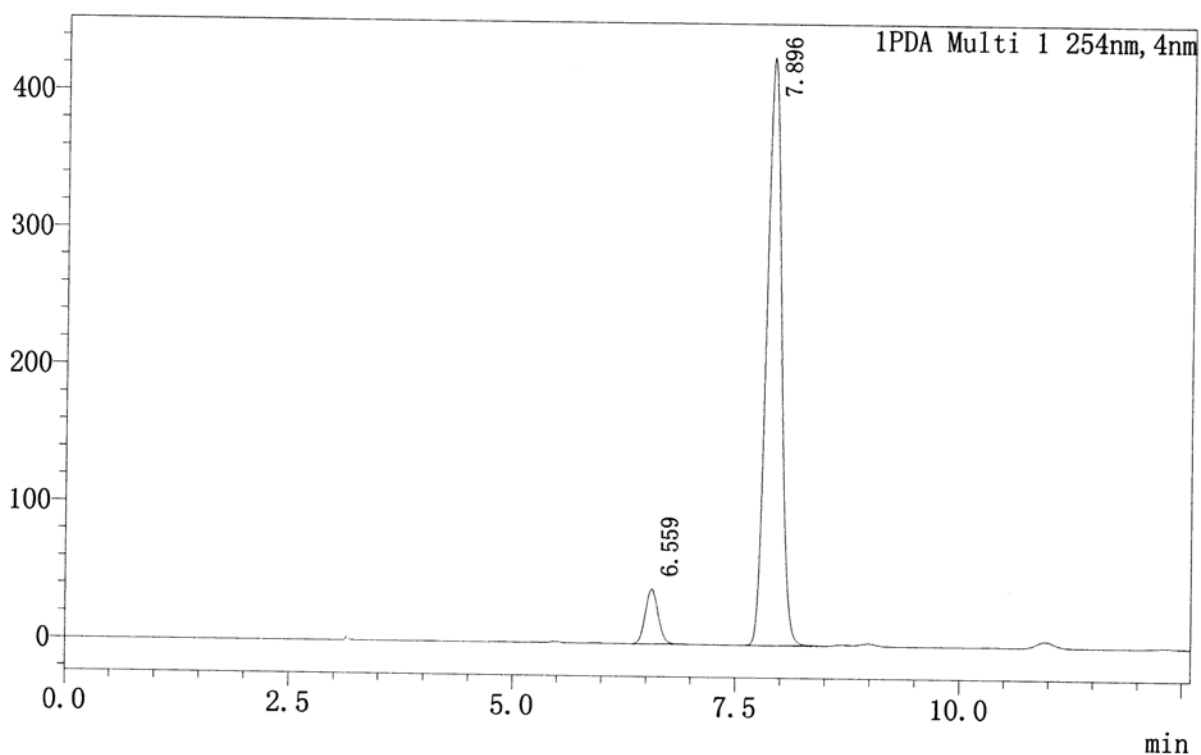


Data Report

Sample Information

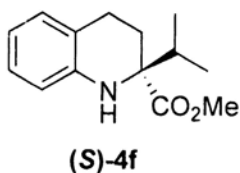
Sample Name : 35726-P,AD3%
Tray# : 1
Vial# : 6
Injection Volume : 7
Data File : 35726-P,AD3%,3%31.lcd
Method File : 3%20min.lcm
Report Format File : Templates.lsr
Sample Type : Unknown
Acquired by : System Administrator
Date Acquired : 2013/5/20 23:15:22
Date Processed : 2013/5/20 23:28:00

mAU



PDA Ch1 254nm

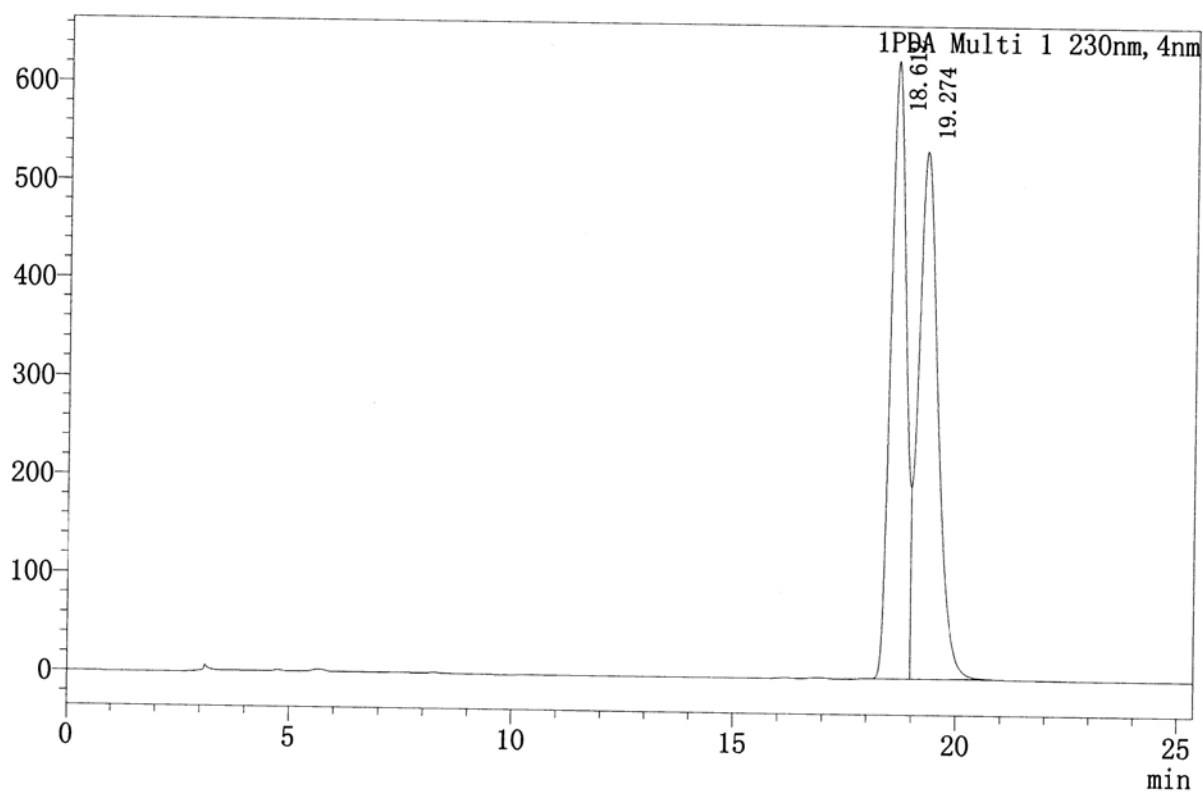
NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	6.559	40054	404963	7.628	--
2	7.896	428672	4904127	92.372	4.497



Data Report

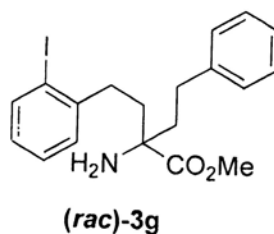
Sample Information
 Sample Name : 35720M(RS),AD-H,3%
 Tray# : 1
 Vial# : 5
 Injection Volume : 5
 Data File : 35720M(RS)',AD-H,3%.lcd
 Method File : 3%30min.lcm
 Report Format File : Templates.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013/5/14 9:25:08
 Date Processed : 2013/5/14 10:11:43

mAU



PDA Ch1 230nm

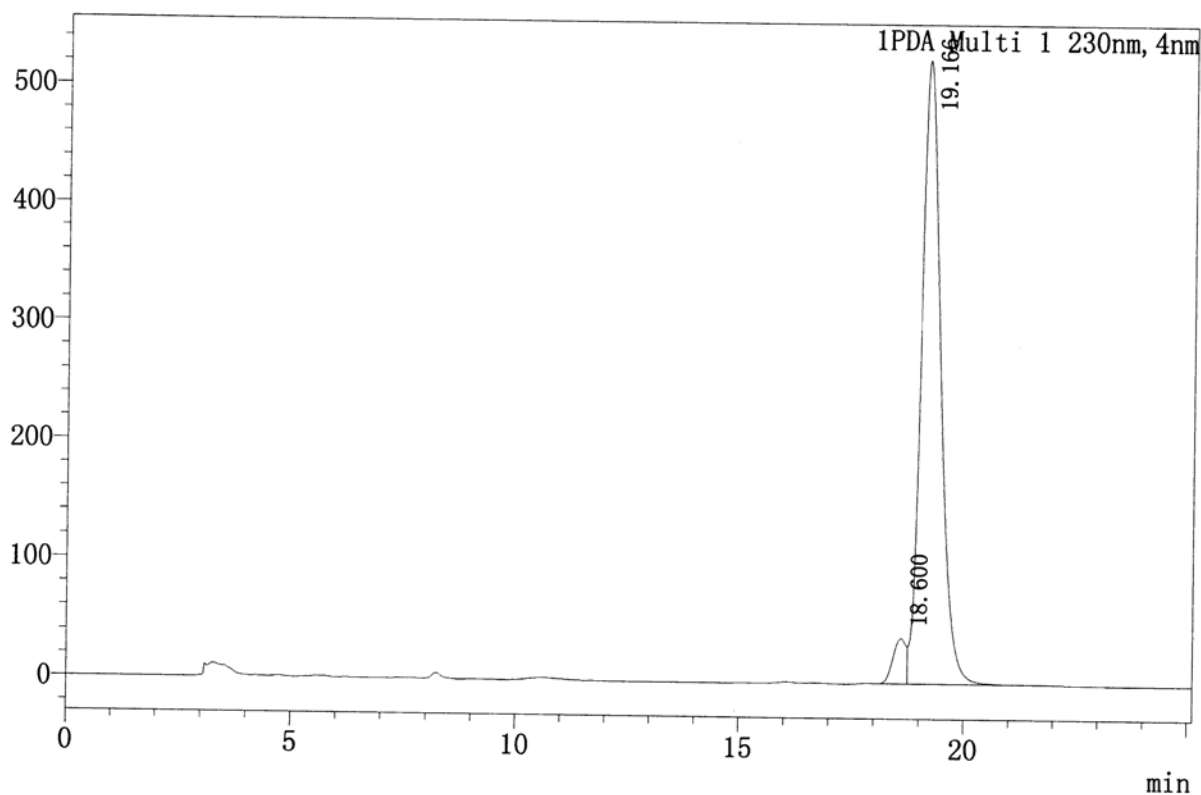
NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	18.612	627873	15048727	47.626	--
2	19.274	536581	16549314	52.374	0.880



Data Report

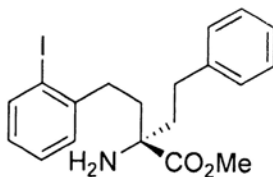
Sample Information
 Sample Name : 35720-M,AD-H,3%
 Tray# : 1
 Vial# : 6
 Injection Volume : 6
 Data File : 35720-M,AD-H,3%.lcd
 Method File : 3%30min.lcm
 Report Format File : Templates.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013/5/14 9:51:42
 Date Processed : 2013/5/14 10:16:51

mAU



PDA Ch1 230nm

NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	18.600	38154	769497	4.652	--
2	19.166	525771	15772591	95.348	0.651



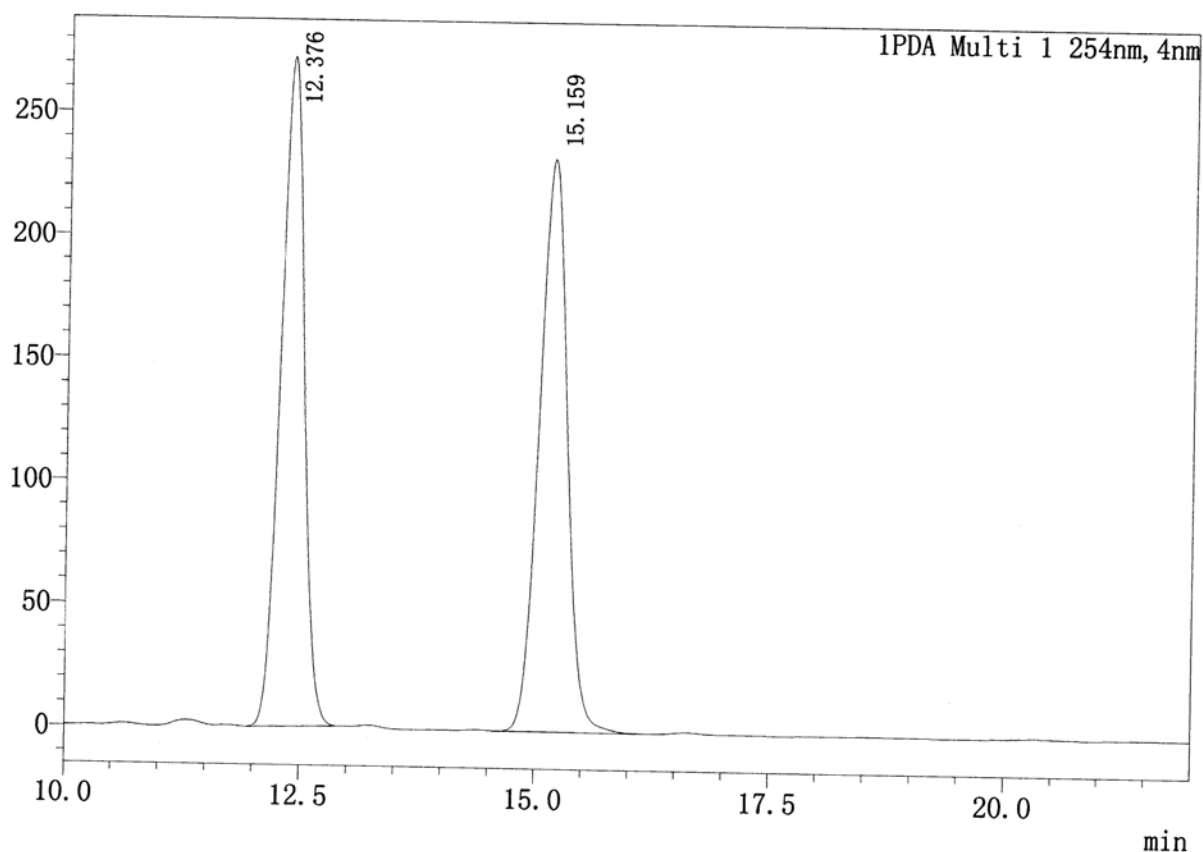
(S)-3g

Data Report

Sample Information

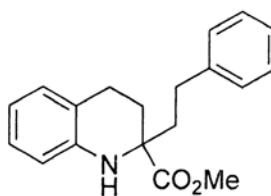
Sample Name : 35720P(RS),AD-H,3%
 Tray# : 1
 Vial# : 7
 Injection Volume : 10
 Data File : 35720P(RS),AD-H,3%001.lcd
 Method File : 3%30min.lcm
 Report Format File : Templates.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013/5/14 10:18:07
 Date Processed : 2013/5/14 10:40:45

mAU



PDA Ch1 254nm

NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	12.376	272289	4708839	49.388	--
2	15.159	232997	4825553	50.612	5.483

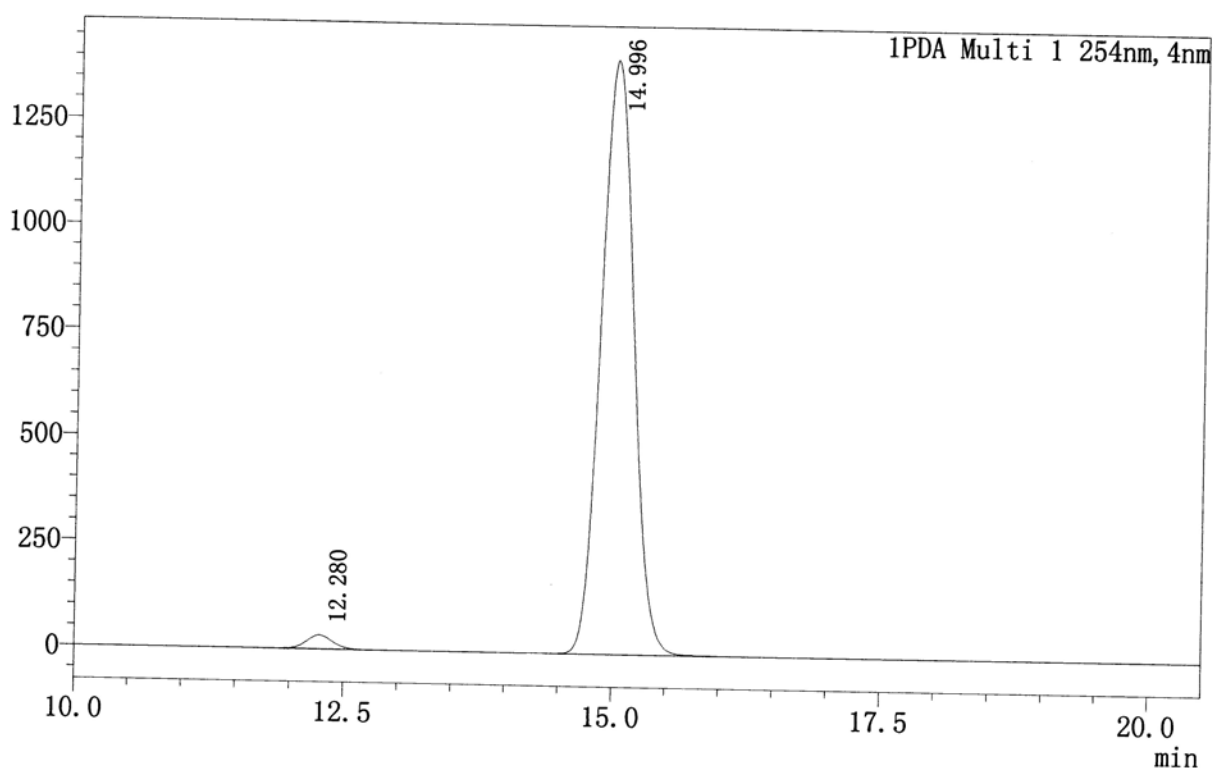


(rac)-4g

Data Report

Sample Information
 Sample Name : 35720-P,AD-H,3%
 Tray# : 1
 Vial# : 8
 Injection Volume : 8
 Data File : 35720-P,AD-H,3%.lcd
 Method File : 3%30min.lcm
 Report Format File : Templates.lsr
 Sample Type : Unknown
 Acquired by : System Administrator
 Date Acquired : 2013/5/14 10:41:40
 Date Processed : 2013/5/14 11:02:13

mAU



PDA Ch1 254nm

NO.	Ret. Time	Height (uAU)	Area (uAU*min)	Rel. Area %	Resolution (USP)
1	12.280	33348	559453	1.830	--
2	14.996	1406328	30016145	98.170	5.360

